The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. LV, No. 23 CHICAGO, ILLINOIS DECEMBER 3, 1910

THE ETIOLOGY OF THE PTOSES AND THEIR RELATION TO NEURASTHENIA*

EDWARD REYNOLDS, M.D.
BOSTON

The application of surgical treatment to neurasthenia implies a belief that in the given case the nervous condition is the product of local suffering; and the attainment of the ultimate object of course implies the complete relief of the local suffering as the first step in the process of cure. It therefore seems logical that any discussion of the surgical aspects of neurasthenia should begin by consideration of the results which may be expected from the relief of the local symptomatology.

In this particular subject of the connection between the ptoses and neurasthenia we are met at the outset by the significant fact that after many years of collective experience in the surgical treatment of the ptoses, the discussion about the end results of operation is almost as active and as much a moot question as it was ten years ago.

It is further significant that a review of the literature of this subject during the past ten years shows at once that the controversy on it has been conducted almost without exception along the lines of advocacy of differing technical methods, with an almost entire neglect of any apparent interest in the cause of the lesions.

Now the whole history of surgical progress shows that the long persistence of such a technical question without satisfactory settlement always implies an unsettled pathology or etiology, and that such a technical controversy is usually brought to an end only by some advance in our theoretical knowledge of the cause of the lesions, after which the decision about methods is usually prompt and easy. Thus the selection of the etiology of the ptoses as the subject of the opening paper in this discussion has the double justification that it is at once the line of discussion which promises the most far-reaching results, and that which has been least worked out.

The first and most important point in the etiology of the ptoses is almost axiomatic. It needs no argument to show that they are never primary lesions, but are always secondary to some preexistent mechanical cause, either (a) in the failure of the natural supports of the organ, or (b) in the existence of some abnormal force antagonistic to the efforts of supports of normal strength. These two classes of cause now demand our further consideration.

The ptoses due to weakness of the supporting structures are far the best understood and may be considered first. Ptoses due solely to such weakness are, however, far less comon than has been generally understood.

Much that has been written in the past on the subject of ptosis would lead one to believe that a spontaneous relaxation of the supports of some one organ was a common phenomenon. So far as my observations go they tend to show that this is an erroneous view and that the muscular relaxations are always general in their character. Cases which appear to be due to localized relaxation of the supports of a single organ will always prove on closer analysis to be due to an abnormal force which is pushing or pulling that organ out of position and which has overcome the tonicity of its natural supports.

The importance of general, constitutional, muscular relaxation, and loss of fat in the production of generalized ptosis is well understood; but so important a fact as this must not be lightly passed over.

It is, moreover, important to realize here that rapid loss of fat is by all odds the most important element in the causation of the class of cases in which the ptosis is the result purely of passive lengthening of the normal supports. The tissues in these relaxed cases have usually been previously stretched by the deposition of fat within them, and if this is suddenly lost lengthening of the so-called ligaments is inevitable.

In treatment it is most essential to recognize that in this class of cases operative treatment is almost never indicated. We must treat them in accordance with their causation. They will usually obtain relief under treatment directed toward the improvement of general muscular tone and increase of nutrition, and will never obtain satisfactory relief without such general improvement. Operative treatment should be adopted only in the very few instances in which the local symptoms which are the product of the ptosis so far interfere with digestion as to render it difficult to secure proper nutrition without it, and even then it must be remembered that subsequent improvement in nutrition and muscular tonicity is the ultimate object of the operation, and that every therapeutic device at our command should be directed toward its attainment.

The causation and management of ptoses of this first class is, however, generally well understood, and belongs to the domain of accepted surgical principles, but the theorem that there are many cases of ptosis which are primarily due to the existence of forces which are antagonistic to the normal supports of the viscera has only recently attracted attention. I believe that many, if not most, of our failures in the operative treatment of ptosis occur in cases of this second class, and are due to adoption of routine operative measures without previous investigation of the cause of the individual ptosis, and often in defiance of continuing forces which directly dispose to its reproduction. The discussion of these predisposing or directly causative anomalies, and of the surgical measures appropriate to their correction, forms, then, my main theme.

* The opening paper in a discussion on "The End Results of Operations for Ptosis" at a combined meeting of the American Surgical and American Gynecological Associations.

The forces which tend to produce ptosis may be of either local or general origin, and must be considered in detail, those of systemic origin and influence naturally coming first.

GENERAL STATIC FORCES

During the last four or five years my attention has been especially directed to a study of the influence of general static or mechanical conditions on the positions of the abdominal and intrapelvic organs, and much of my time has been given to a prolonged experimental, and, of late, clinical study of this subject in collaboration with Dr. R. W. Lovett. Our experimental studies as bearing on the relation between balance in the erect posture, backache, and the intrapelvic lesions, have been recently published,[1] to which paper I must refer in support of many of the statements which I shall make here. During the past year clinical papers bearing on the same subject as connected with ptosis have been published by

Fig. 1

Fig. 2.

Fig. 1.—The round-shouldered, hollow-backed position. An outline reproduction of a photograph from life. Not an extreme example.

Fig. 2.—The overfeminine figure. An outline reproduction of a photograph from life. Not an extreme example.

several widely separated observers.[2] Dr. Lovett and I are now actively engaged in the collection of cases and the tabulation of symptoms and conditions for the purpose of studying these states from a clinical standpoint, but, significant as we think that this study is proving in everyday clinical work, the number of cases which we have observed with accuracy is not yet sufficient for the publication of exact results. I must be content here with a merely preliminary, and I hope suggestive, outline statement of a few of the main facts which we have observed.

The variations which we have grown to think important are partly functional and partly congenital, or compubertal variations of skeletal form. First and perhaps most important among them is the attitude known to orthopedic surgeons as the round-shouldered, hollow-backed position illustrated in Figure 1. In this attitude the center of gravity is carried too far forward for easy maintenance of balance, and the capacity of the upper part of the abdomen is decreased by the forward droop of the upper dorsal spine and the descent of the ribs, while the relaxation of the anterior abdominal wall produced by the approximation of the ensiform cartilage to the pubes permits the formation of a pot-belly, with consequent increase in the capacity of the lower abdomen. During the gradual supervention of this abnormal attitude the contents of the upper abdomen necessarily tend to rearrange themselves downward in adjustment to the altering pressures, while the unduly forward position of the lumbar vertebræ, from the anterior face of which the intestines depend, leads to the impaction of their dependent coils against the anterior wall of the abdomen and pelvic cavity.

In the normal attitudes the impact of the intestines is directed against the posterior surface of the uterus and tends to hold it forward, but when, as in this attitude, the intestines necessarily slip into and out of the pelvis along its anterior wall they must sooner or later enter the uterovesical pouch during descent, and so force the uterus and its adnexa backward.[3]

This attitude is present in a surprisingly large fraction of all ptoses, and is causative toward the ptoses of all the viscera; since I have been led to look for it I have become shocked and ashamed at the blindness which has led to my utter failure to even see so noticeable a phenomenon during all the previous years in which I have been dealing with them. I think that this will be the experience of any operator who has not been previously impressed with the importance of this attitude.

If in such a case an operation for the relief of a ptosis of any one of the viscera is performed without correction of the vicious attitude the persistence of the latter and its consequences is of necessity a continuous force against the permanent endurance of the result. This posture is probably the product of a functional loss of correct balance and is due to factors the relative importance of which we are as yet unable to isolate with certainty.

The second abnormal posture of which we feel able to speak with some certainty is a developmental variation which has been heretofore neglected, but which we have ventured to describe as the overfeminine figure, and which is illustrated in Figures 2 and 3. These women have more or less overextended knees, large hips, hollow backs, and usually somewhat small waists and prominent busts. They are apt to become fat and to have noticeably

1. Reynolds, Edward, and Lovett, Robert W.: An Experimental Study of Certain Phases of Chronic Backache. THE JOURNAL A. M. A., March 26, 1910, p. 1033.

2. Mosher, E. M.: Habits of Posture a Cause of Deformity and Displacement of the Uterus, Woman's Med. Jour., December, 1909.
Lane, W. A.: Civilization in Relation to the Abdominal Viscera, with Remarks on the Corset, Lancet, London, Nov. 13, 1909.
Fish, Cecil E.: A Summary of Several Other Papers Referred to as the Heather Bigg Controversy, Lancet, London, Feb. 5, 1910, p. 397.
Albu, A.: Visceral Ptosis a Constitutional Anomaly, Berl. klin. Wchnschr., xlvi, No. 7, p. 285.
Landau, L.: Visceral Ptosis (Zur Lehre von der Splanchnoptose), Berl. klin. Wchnschr., xlvi, No. 7, p. 285.
Goldthwait, Joel E.: The Relations of Posture to Human Efficiency and the Influence of Poise on the Support and Function of the Viscera, Boston Med. and Surg. Jour., Dec. 9, 1909.
The following papers are also of interest in this connection:
Lange, Fritz: Schule und Korsett, München. Separatabdruck aus der München. med. Wchnschr., Nos. 13 and 14, 1906.
Klapp, Rudolf: Der Erwerb der aufrechten Köpferhaltung und seine Bedeutung für die Entstehung orthogenetischer Erkrankungen, München. med. Wchnschr., Nos. 11 und 12, 1910.
Kossman: Allgemeine Gynecologie, Berlin, Hirschwald, 1903.
Stratz: Die Schönheit des weiblichen Körpers, Stuttgart, Ende, 1899.
Stratz: Der Körper des Kindes, Stuttgart, Ende, 1909.

3. It has long been recognized that the intra-abdominal pressures correspond closely to hydrostatic laws owing to the nearly equal specific gravity of all the contents; but upon this very basis it is evident that intestinal coils which contain gas will tend to rise, and thereby displace downward those which contain fluid, hence the constant change in position of individual portions of the intestines during peristalsis.

small hands and feet. Their center of gravity is habitually carried too far forward. In them the inclined position of the anterior abdominal wall and the forward inclination of the lumbar spine tend again to impact of the intestines against the anterior pelvic wall, and consequently to displacement of the uterus. We have not, however, seen reason to think that this posture is often associated with the ptosis of the upper abdominal viscera, except when these are due to the dependent drag of a pendulous abdomen, which is, however, certainly an especially common accompaniment of this figure in middle life.[4]

We have worked so long on this subject that we are very anxious to put forth no statements which are not likely to be substantiated by further observations. We do already feel confident that the two variations of posture illustrated are of real importance in their relations to the ptoses, and that their habitual correction will lead to a higher degree of success in the operative treatment of ptosis than is possible without it. We have seen such correction of attitude lead to the relief of symptoms in cases which had previously been operative failures, and we have seen it yield both anatomic and

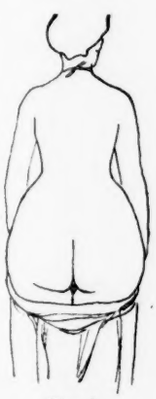


Fig. 3.

Fig. 4.

Fig. 3.—Dorsal view of subject shown in Figure 2. Note size of lumbosacral as contrasted with dorsal region. This variety of figure is a developmental exaggeration, and not radically alterable, though its consequences may be relieved.

Fig. 4.—Diagrammatic representation of a weight suspended by a sling.

symptomatic success without operation, in cases which we should formerly have considered operative.

Much curious information is also coming to hand on the relation of the lateral inequalities and distortions, such as lateral curvatures produced by short leg or unequal pelvis, *e. g.*, to the disturbances of anteroposterior balance, and to the production of unequal abdominal strains and ptoses; but, although we are frequently obtaining clinical relief in otherwise obstinate intrapelvic and upper abdominal conditions by associated treatment of these distortions, all this is also too little worked out to be fit for more than the merest mention here.

Both of the attitudes illustrated are largely correctible. Their treatment lies in (a) gymnastic exercises, graduated outdoor exercises, improvement of nutrition and similar methods; (b) in mechanical aids to balance and posture. The first class of treatment I shall not enter into, because, important and all-essential as it is, its methods are well established and I have nothing new to offer on it, but on the mechanical therapeutics of the trunk our experimental work has thrown some light which we think has been borne out by our clinical experience.

We believe that not only in the functional backaches, but also in the ptoses the essential factor in mechanical treatment is the rectification of the incorrect posture which is so constantly a factor, and apparently a determining factor, in their causation, and which is itself always dependent on an abnormal position of the center of gravity. Our experimental work has shown that this abnormality can be corrected by appliances far more simple and comfortable to the patient than many which are in use, and our clinical experience leads us to believe that equally good results are attained thereby.

The subjects of ptosis are almost invariably neurasthenic, and we believe most emphatically that in their treatment by mechanical appliances the first and prime necessity is that the apparatus used should be comfortable. The surgeon who fixes attention on a local condition and subjects a neurasthenic who is annoyed by a ptosis to prolonged and continuous discomfort from straps and steels does harm rather than good. He too often substitutes a greater discomfort for the lesser one which he is attempting to relieve. The great advantage which the therapeutic corset has over the complicated harnesses so often employed is that it can be made, and should always be made, a distinct comfort to the patient from the moment it is applied. It may be said of the corset, as it has long been said of the pessary, that if it is not comfortable it is not efficient, and with almost equal truth, that if it is not comfortable it is doing harm.

Extreme cases may demand extreme treatment, but we believe that a corset properly contrived to support the lower abdomen is for most cases the simplest, least harmful and most generally effective appliance, especially if it is backed up by proper shoes.

It is certainly true in my experience with nephroptosis that corsets, belts and pads adapted to make direct pressure on or below the prolapsed kidney have proved far less effective than those which are fitted to restore the normal direction to the general intra-abdominal pressure, both by properly directed compression and by restoration of balance.

Lack of space forbids me from entering fully into mechanical therapeutics here, but a few words descriptive of the mechanism by which the therapeutic corset chiefly corrects attitude may be of interest. As has been said, the leading general characteristic of all these attitudes is the carriage of the center of gravity of the body too far forward, with backward displacement of the buttocks and forward displacement of the upper part of the trunk. We have been able to demonstrate experimentally that the use of high-heeled shoes tends to sway the body as a whole backward from the ankle; also that certain forms of corsets, as well as other forms of apparatus, to which we have only referred incidentally in our publications, tend to bring the buttocks forward and the shoulders back, and this latter movement is effected by a mechanical principle which is also perhaps of sufficient interest to be mentioned here.

It is a general rule in mechanics that the action of opposing forces at rest is always opposite and equal, so that the downward pressure on the lower end of a sling

4 It is important to distinguish between the rotundity due to increased fat with increased abdominal pressure, and the protuberance due to true relaxation of the abdominal walls with decreased or even negative intra-abdominal pressure.

(Fig. 4, A) in which a weight is suspended is of necessity exactly equal to the traction on the upper end of the sling (Fig. 4, B); thus, if the weight of the pendulous abdomen is suspended by a belt or therapeutic corset which obtains its bearing from the posterior surface of the sacrum, that weight may be regarded as having been transferred from the anterior to the posterior side of the lower portion of the trunk. It is, in fact, mechanically equivalent to a weight placed on the sacral region; but if a weight is so placed on any portion of the posterior surface of the body it carries the center of gravity of the whole mass so far backward that the model must either fall backward or readjust the center of gravity;[5] and if the weight is placed on the sacrum the necessary change is, in fact, effected by carrying the hips forward.

If, however, the hips were carried forward without alteration of the position of the trunk the center of gravity would at once be carried so far to the front that the subject would fall on her face; hence the forward motion of the hips superinduced by the weight on the sacrum is of necessity complemented by a backward motion of the shoulders. In practice as well as in theory the first among the many effects of the therapeutic corset is a readjustment of posture by moving the hips forward and the shoulders back, *i. e.*, the assumption of an erect posture. It is to be noted, too, that this straightening of the dorsal spine and squaring of the shoulders with consequent elevation of the ribs and expansion of the chest is effected by the patient's own muscles under the influence of an instinctive effort toward the maintenance of balance. It is an active and natural return to a desirable attitude under the influence of the change in the abdominal pressures and in the position of the center of gravity. As such it is therapeutically far more desirable than the enforced and passive assumption of the same attitude in opposition to the natural instincts which is produced by shoulder-straps and rigid back-braces.

One word of caution must be inserted. We have learned by experience, and considerably to our surprise, that the change of dorsal attitude so induced may easily be made so extreme as to cause new dorsal and cervical aches if it is pushed too rapidly. The first corset should not be so cut or adjusted as to produce all the effect that is ultimately to be desired. A moderate change of attitude is all that is at first permissible, and adjustment to this new position should be effected by graduated exercises before more is attempted.

Another great advantage of the therapeutic corset as a mechanical corrective is that, if properly made, it restricts the motion of the body above the waist exceedingly little and permits free play to the dorsal and scapular muscles throughout the patient's day.

In conclusion of this section I may say that no one can appreciate more fully than Dr. Lovett and I the elementary character of all that we are as yet ready to say on this subject, but we believe that our experiments and observations have already gone far enough to warrant our belief in the importance of posture in this as well as in some other relations; moreover, this belief is supported by the publications already alluded to. In practice, too, we are obtaining so much satisfaction that we feel confident of the importance of this subject. Many ptoses are dependent, as is yet to be said, on conditions which can be remedied only by operation; many chronic backaches also are dependent on anatomic lesions which can be treated radically only by operation, but the great majority of both affections have a general static element in their etiology and demand its recognition in their treatment. In especial we may say that there are but few chronic backaches which cannot be remedied if both elements in their etiology are taken into consideration.

The abdominal surgeon must learn that in a large proportion of cases of the nature under consideration he must utilize the aid of mechanical and gymnastic therapy if he wishes complete results. The orthopedic surgeon also must learn that ptoses and backaches are by no means universally of purely static origin, and that whenever a case of this nature fails to react promptly to mechanical and gymnastic treatment an examination of the abdominal and intrapelvic organs should precede all further orthopedic effort. In many of these cases the two specialists must work together if really satisfactory results are to be attained.

LOCAL ABNORMALITIES

The static abnormalities are general in their action and may effect the relations of any or all of the abdominal viscera. The local causes of ptosis, now to be spoken of, are, on the contrary, individual to each organ. They are probably of equal importance throughout the abdomen, but in treating of them I propose to restrict myself here to the local causes of the intrapelvic ptoses only, since it is in that portion of the abdomen that these local causes are most easily worked out, and on the local causes of the ptoses of the upper abdomen I am not yet ready to speak.

The local causes of the pelvic ptoses are to be found in the inflammatory lesions, trauma, and some developmental anomalies, each of which with its treatment must now be taken up by itself.[6]

In this connection it is well to remember that the retrodisplacements are in themselves ptoses and are, moreover, no more than the first stage in complete ptosis of the genital organs. For the purposes of this paper, then, all the displacements of the uterus and its adnexa may be fairly considered as a single group of essentially similar lesions which can be dealt with here as a whole; and for economy of space they will be so treated.

In the pelvic ptoses due to obstetric trauma and inflammatory diseases the static predispositions are again of some importance, and at the risk of repetition I must again briefly refer to them here.

The operative treatment of the ptoses due to obstetric trauma is mainly concerned with the repair of lacerations, but it is well recognized that extensive obstetric trauma is sometimes followed by curiously little loss of support, while in other cases extremely slight solutions of continuity are followed by displacement, descensus, or perhaps by complete prolapse, and the explanations offered for these differences in result have not been heretofore wholly satisfactory. I believe that a valid explanation of them is now to be found in the existence, or nonexistence, of the predisposing causes in the individual anatomy. I believe, too, that the search for these causes is all important in the treatment of these cases also, and that their correction will often contribute most satisfactorily to the avoidance of the failures which still too often follow on an operation for prolapse.

5. For suggestions leading to the elaboration of this and many other mechanical points we gladly acknowledge our indebtedness to personal communications from Dr. Ansel G. Cook of Hartford whose instinctive appreciation of the problems of balance is well known to the orthopedic portion of the profession.

6. Consideration of the ptoses due to the weight of new growths will be omitted here.

Perhaps the most prominent of all the local causes of the pelvic ptoses are the infections of the Fallopian tubes. It is universally recognized that adherent tubes drag the uterus backward and that the separation of the adhesions is the first step in the operation in these cases; the methods which should be adopted for the remainder of the operation constitute the only point in question. I believe that here we must rest on the original cause. When the history and physical examination warrant the belief that the occurrence of an infection in previously wholly normal organs was the only source of a displacement, the separation of the adhesions is a complete removal of the cause, and the operation which best holds the tubes away from the posterior peritoneum is the operation of choice. On the other hand, it must not be forgotten that the displaced genital organs are especially prone to inflammation and adhesions from slight causes, and that ptosis of the uterus and its adnexa, originally simple and the product of other local or general causes, may in time become complicated by inflammatory conditions which overshadow the original causes. In these cases the method of treatment adopted after the separation of adhesions should depend on the original cause of the lesion, whatever that may have been, precisely as in uncomplicated retroversions.

The developmental anomalies are of the utmost importance, since there can be little doubt that the whole subject of ptosis is closely related to that of general underdevelopment and should always be studied in that light. In the absence of the evidence of general underdevelopment the local anomalies are, however, ordinarily in themselves a sufficient explanation for the ptoses, and indicate at most only some modification of the ordinary operative treatment.

Among those developmental anomalies which are efficient local causes of uterine displacement, or ptosis, limited space prevents my mentioning more than the three which I have most frequently seen.

Normally the vagina and rectum separate somewhat below the level of the posterior cul-de-sac; exceptionally they are attached to each other throughout the whole length of the vagina, and even up to its actual attachment on the posterior surface of the uterus. In this anatomic condition the effort of emptying an overloaded rectum necessarily forces the uterus backward and downward, and if this condition is allowed to persist it will almost certainly militate against a good result from operation. It is not an extremely common anomaly, but I have seen it effective in a number of instances, and the possibility of its existence is well worth the momentary inspection which will detect it. If it is found, the separation of the rectum from the upper part of the vagina is easily effected, and should then be rendered permanent by a transverse suture of the incision. This small addition to the operation will in such cases make the whole difference between success and failure; without it the contest between the new mechanical conditions which were brought into being by the operation and the still existent abnormal rectal attachment, which drags the organ backward and downward, is likely to result either in the loss of the anatomic results of operation or, if they persist, in the production of a new pain.[7]

A not infrequent and a very important anomaly which has not attracted so much attention as it should is the persistence into adult life of one of the so-called ileolumbar ligaments which are normally present in the fetus. These structures represent ontogenetically the primitive support of the genital organs, but have disappeared normally in the adult human female. It will be remembered that during fetal life the ovary, like the testicle, descends from its original position in the forward part of the celom to its final position in the pelvis, while at the same time the kidney moves in the reverse direction. These movements are bilateral, but on the right side of the abdomen they are complicated by the descent of the cecum and ileum. They are accompanied and probably facilitated by the development on each side of longitudinal folds of peritoneum containing freely developed smooth muscular fiber which have been described by numerous anatomists[8] under several names (*e. g.*, ileolumbar, lumbo-ovarian, ileo-ovarian, appendiculo-ovarian ligaments).

During a portion of fetal life these ligaments are strong and well-marked longitudinal structures which draw the fundus upward and backward in opposition to the as yet little-developed round ligaments. With the progress of development they relax and permit the formation of the transverse broad ligaments. Eventually the ligament of the left side entirely disappears, while a portion of its fellow on the right side persists permanently. This structure is well known as a fold of peritoneum which originates sometimes in the mesentery of the appendix, sometimes in the mesentery of the ileum, sometimes in both, and from there runs downward to be lost in the general peritoneum at the brim of the pelvis. It has been recommended as a guide to the appendix.

I know of no instance in which the ileolumbar ligament of the left side has been found persistent, but I have seen numerous instances of its total or partial persistence on the right side. It then forms a band, which with its continuation, the utero-ovarian ligament, connects the right cornu with the peritoneum in the neighborhood of the ileocecal valve. When fully persistent it holds the uterus in forced retroversion; this condition is, however, probably rare, I have seen but one instance of it, but its partial persistence is not uncommon. It is then easily overlooked unless the uterus is drawn strongly forward with the intent of searching for it, when it springs into prominence. If it is not detected this effect will of course be produced as soon as the uterus is drawn into anteversion by any operative procedure. It then forms a retro-uterine guy on which the weight of the intestinal coils must necessarily rest when the patient reassumes the erect posture, and persists as a strong element against the success of the opera-

7. In this connection note also the recent development of intra-abdominal operations directed against the tissues immediately behind the cervix.

8. Graves, William P.: Incomplete Descent of the Ovary and Persistence of the Lumbo-ovarian Ligament as a Cause of Retro-Deviation of the Uterus, Bull. of the Free Hospital for Women, March, 1903, 1, No. 1.

Durand: Le ligament ileo-ovarien (Appendiculo-ovarien de Clado); Contribution a l'étude du ligament large.

Gebhard: Pathologische Anatomie der weiblichen Sexualsorgane, Leipsic, Hirzel, 1899.

Hasse:, C: Beobachtungen über die Lage der Eingeweide im weiblichen Beckeneingange, Arch. f. Gynäk., 1875, viii, 402.

Küstner, O.: Lage und Bewegungs-Anomalien des Uterus, In Veit's Handbuch der Gynäkologie, Wiesbaden, 1897, i, 63.

Poirier: Lymphatiques des organes génitaux de la femme, 1889.

Rouget, C.: Recherches sur les organes érectiles de la femme et sur l'appareil musculaire tubo-ovarien, dans leurs rapports avec l'ovulation et la menstruation, Jour. de physiol., Paris, 1858, ix, 320.

Schultze, B. S.: Zur Kenntniss von der Lage der Eingeweide im weiblichen Becken., Arch. f. Gynäk., 1876, x, 262.

Vallin, Paul: Situation et prolapsus des ovaires, Paris, 1887.

tion. My experience, which now covers thirteen years of observation, leads me to believe it a not uncommon anomaly.

I have also seen some reason to suspect that this anomaly may sometimes be responsible for a ptosis of the kidney, a view which its embryologic significance would tend to support. I have once seen it responsible for a displacement of a portion of the ileum.

If this ligament is found it should be divided and the cut edges of the peritoneum whipped over before any form of suspensory operation is done, care being taken that the division is sufficiently extensive to lead to full relaxation.

Perhaps the most important of all the developmental anomalies is, however, the condition known as anteflexion of the cervix. This lesion, though familiar to every gynecologist, has, I think, not been generally recognized as a cause of retroversion. It is, in point of fact, a developmental failure, a partial persistence of an infantile condition, in which the cervix is held forward by a congenitally short anterior vaginal wall and similarly shortened uterovesical ligaments; but since the cervix is much the most firmly suspended portion of the uterus, a forward fixation of the cervix necessarily tends to a backward position of the body. That the forward position of the fundus which is originally characteristic of anteflexion of the cervix is not, as is usually believed, necessarily due to an organic curvature of the body, is shown by the fact that forward fixation of the cervix is present in an extremely large proportion of all straight retroversions of the uterus, and that in each of these the reposition of the body by operation only restores the overbent condition from which the organ had escaped by straightening out into retroversion. Dysmenorrhea which has been recovered from is often reestablished by such operations.

Lack of space forbids my entering at length into this subject, but my own experience in observation of it has been so conclusive, and already so extensive, that I am confident that any observer who will trouble himself to watch for this condition in his cases of retroversion will become convinced of its importance. Indeed, one has only to watch the effect of temporary anesthesia on uncomplicated cases of anteflexion of the cervix to find that under the muscular relaxation so induced the fundus commonly falls backward, to be drawn forward again when muscular tone returns. It can then hardly fail to be a constant influence towards retroversion.

The condition is easily remedied by a transverse division of all the tissues in front of the cervix. The vaginal wall should be divided transversely with the knife just anterior to its junction with the cervix, the bladder should then be separated from the supravaginal cervix by blunt dissection with the finger, and the tissues on either side of the cervix and anterior to the broad ligaments should be somewhat widely separated by the same blunt dissection. The only bleeding will be from the cut edges of the vaginal wall and will be entirely controlled by the suture, which should be inserted transversely and for elongation of the vaginal wall. The deeper tissues need no attention. The adoption of this simple procedure as a preliminary to the abdominal treatment of retroversion in these cases has much improved my own end results, and I feel sure that this point is an important one.

I believe that the developmental anomalies of the viscera of the upper abdomen form a point well worthy of further study in connection with their ptoses.

In conclusion of my treatment of this first question, *i. e.*, of the local end results of operation, I must permit myself to say that I cannot help feeling, more and more clearly, with each succeeding year of the five which I have now devoted to the pursuit of this subject, that the careful study of the etiology of each case of ptosis promises in the end to clear up much of the confusion which has so long surrounded and still shrouds this question, and to lead to the intelligent adaptation of the form of operation chosen to the needs of the individual case; also that I am becoming persuaded that the detection and correction of auxiliary or predisposing causes before operation is undertaken, and their reasonably continued treatment after operation has been performed is even by itself of far more importance to both anatomic and therapeutic success than the exact form of operation which is selected.

The answer to the second question proposed to us—the effect of operations for ptosis in neurasthenics on the neurasthenia itself—seems to me to depend, first, on a definition, and, second, on another etiologic point.

The term "neurasthenia" is, like the term "rheumatism," one which covers so many different states as to have no satisfactory meaning in modern medicine. The mere definition of this term has in fact provoked in the last ten years a large neurologic literature of its own. It is therefore all important that any discussion on this subject should start with a definition of what is to be talked about.

I take it that as surgeons we are not concerned with the subtleties of neurologic classifications and that in using this loose and popular term we understand merely a state of low resistance to the depressing influences of the environment, irrespective of the cause to which this low resistance may be due. If this is what we mean, it follows as a logical necessity that our operations will improve the neurasthenic state in those cases in which the lessened resistance is due to the lesions on which we operate, and in no others. An attempt to relieve neurasthenia of psychologic origin by surgical operations on local lesions will invariably make the abnormal psychologic state worse. Self-evident as this may appear, it is a general principle which is too often forgotten.

From a practical standpoint it has seemed to me that the crucial test of whether the state of lessened resistance which we call neurasthenia is, or is not, dependent on the effects of local lesions lies in a careful study of the chronologic relations between the local and general symptomatology. If the neurasthenia has been pronounced and prolonged before local suffering appeared the patients will seldom be benefited by operation. If, however, prolonged suffering of local origin has preceded the advent of the neurasthenia, complete relief of the local suffering will usually result in general systemic improvement, and in increased power of resistance to the general wear and tear of life.

Two general principles must, however, be always borne in mind: First, even in these cases the only way in which the operation can benefit the neurasthenia itself is by resulting in a permanent relief of local suffering; for this reason no operation should be undertaken until the surgeon has convinced himself by close study that the local suffering is directly dependent on the local lesion and will be relieved by its repair. Second, in neurasthenics an operation which does not definitely and permanently relieve the local symptoms invariably increases the neurasthenia.

It must be remembered also that in all those cases with which we as surgeons can properly deal, the state

of lessened resistance to the wear and tear of life which we call neurasthenia is always the product of an excess of physiologic expenditure over and above physiologic income, and that even if this excess of expenditure be in part the result of local suffering, we can expect no satisfactory result from operation in patients who are so situated that their expenditure under the ordinary fatigue of life is, and must remain, in excess of their powers. In such cases the results of operation will be unsatisfactory unless the conditions of the patient's life can be so far altered that the vital expenditure after operation will be less than the patient's intrinsic vital income. I believe, then, that the attainment of satisfactory end effects on the neurasthenic state itself depends, first and primarily, on the selection for operation of cases in which the neurasthenia is the result of local suffering due to local lesions, and the exclusion from operation of all other cases; secondly, on the termination of local suffering by successful end results in the operation itself, and, thirdly, on successful regulation of the patient's life after operation, either by the surgeon himself or by an intelligent medical attendant.

The too frequent failures which we have all seen are usually the result of operating in the wrong cases; and, on the other hand, much injustice is undoubtedly done to many individuals who are subjected to what is generally regarded as the reproof of nervous invalidism when in reality their suffering is real, and derived from some remediable localized cause. Were we sufficiently wise in our selection of cases there would be few more satisfactory end results than those which we should attain in the treatment of the neurasthenic state itself by operation.

321 Dartmouth Street.

RELATION OF RECRUITING TO PREVENTIVE MEDICINE *

W. H. RENNIE, M.D.
WASHINGTON, D. C.

That old and trite saying that "the efficiency of an army or navy depends on the soundness of the health of the individuals composing it," was equally true in the past as in the present, when the study of preventive medicine is so much to the fore. To-day there is a deeper appreciation of the reality of this fact, and consequently the work of recruiting has assumed the serious rôle to which it is entitled.

"Since the most important factor in the efficiency of an army is its health, it follows that everything which may influence this in any way for the better or worse should be looked after with the utmost care. The men who compose an army are drawn from civil life, in which each individual has, to a greater or lesser extent, independent control of his time, choice of occupation, selection of food and dwelling-place, and general sanitary care. After enlistment, soldiers lose most of this independence; they are housed, clothed, fed and exercised under regulations which it is beyond their power to amend; they are moved from one point to another, differing perhaps very widely in climatic and other conditions, under orders which they may not presume to question; their hours for sleep, meals, work, and recreation are fixed for them without consultation with them, and without regard to individual or communal preference." [1] This applies with equal force to men-o'war's men.

The importance of the work of recruiting is more particularly emphasized when one considers the large percentage of rejections, 67 per cent., the few accepted, 33 per cent.; and of the latter, despite rules and regulations and utmost care, some must be discharged on the first re-examination on the receiving ship, the number surveyed each year not in the line of duty or existed prior to enlistment, besides the cost in time, labor and keep, loss to the government, and the hard fact that the physically undesirable recruit is filling the place otherwise occupied by a good man.

The life at sea is at times arduous, calling for stamina and unexpected demands at any hour of the day or night, for the man enlists for general service, for war as well as for peace, never forgetting that the question of the line of duty and pension may arise in each case.

The applicant, as he presents himself at the recruiting office, is not of a distinct and separate class; on the contrary, he represents all types and comes from all walks of life, from the highest to the lowest. He is the graduate in medicine, law, theology, the teacher, the pharmacist, the student, the actor, the artisan, the clerk, the laborer, the schoolboy, the gentleman hobo and the tramp; from nearly every field of human activity men seek entrance into the enlisted force of the United States Navy.

Among such a collection of potential men-o'-war's men are met all degrees of physical defects as well as physical perfection (so far as this is possible); all degrees of cleanliness of person and clothes; men with and without means of livelihood; the stupid and the mentally weak, ascending to the highly trained and educated; men of travel, men from home and the poor devils looking for a home, men of the city and men off the farm; those of unsavory reputation, the lovelorn and other runaways—in fact, there are no exceptions, for all classes of men, for all reasons, wend their way to the examining room of the recruiting office.

The vagrants, the great unwashed, are undesirable as a class; they bathe at long and irregular intervals; their habits morally, mentally and physically, are scarcely commendable, and they have learned to dislike work. Sometimes I think they should be excluded without exception; the price paid for the few good men is too exorbitant for the undesirables sure to gain entrance. Just as the chain is no stronger than its weakest link, so the man when needed will break at his weak point. The ounce of prevention is also valuable in the work of recruiting.

In all wars the number of deaths from disease has been far in excess of that of casualties, and more discharges are due to sickness than to injuries.

"The examination is very thorough, and includes the mental condition, the principal organs of the body, the general formation, the chest capacity, the condition of the teeth, skin, joints and feet, and the presence or absence of hernia, varicocele and other disqualifications." [2] The recruit must be well-built all around, superior to the average in muscular development, or, if in youth, have potential strength. He must be sound, ready for all kinds of work and sudden strain.

---

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-First Annual Session held at St. Louis, June, 1910.

1. Harrington: Practical Hygiene, p. 565.
2. Practical Hygiene, p. 572

It must always be remembered that the man on the sick-list is counted on the ship's complement of enlisted force, and that his station would otherwise be filled by a capable man. "Such men are not merely ineffective themselves, but exercise a detrimental effect on the morale of their associates. The mental attitude of a man whose physical infirmities prevent him from fully meeting the demands of his station and surroundings soon becomes one of chronic discontent and discouragement, a nuisance to himself, his shipmates and his superior officers."[3] A man, attempting to enter the navy conceals and makes light of any trouble, but once enlisted, the same man magnifies it. A man-o'-war's man can not be coerced when the question of an operation arises and hence, he will often seek his discharge on the slightest provocation. "Certain disease influences are prevalent in, and more or less peculiar to, certain parts of the country, and applicants for enlistment from these sections represent the possibility of being the victims of them in such form and stage of development as would escape detection by the usual routine examination unless specially looked for."[3] Such, for instance, are the apparent heart affections of altitudes like Denver.

"The examining surgeon shall consider carefully the adaptability of the applicant in relation to the character of the duties which he may be called on to perform. Moderate height and compact build are requisite in the rating of fireman and coal-passer. The duties pertaining to these ratings are extremely arduous, and applicants for such positions must conform in every particular to the required physical standard."[4] The examining surgeon should remember that all candidates examined for the several special ratings are enlisted for the performance of all duties pertaining to the naval service, ashore and afloat.

The city-born and bred are already inured to certain hardships and to all diseases of children. Dr. Woodhull, lieutenant-colonel, Medical Department, United States Army, however, says on this point: "In raising new troops, when it is possible to select, for sharp and immediate active service take town-bred men. If a year or two can be added in which to train them, take country-bred men. Open-air military life is physical promotion to city men accustomed to irregular hours, unwholesome meals, and poorly ventilated rooms. To country lads the irregular and sometimes scanty meals, broken rest, necessity for prompt and exact action, and above all the certainty of acquiring such diseases as measles, whooping-cough, and mumps, which town boys always have in childhood, are very exhausting. After a year's training, country youths are more valuable." [1]

The recruit must be sufficiently young and moldable in order to adapt himself to the new life on board ship which, at the best, is unnatural. The age for entrance must be between 17 and 35.[1]

"It is almost the universal opinion that recruits ought not to be accepted below 20, or better, 22. At 18 years, the recruit is immature; the bones are not fully formed, nor have they reached their final hardness; the epiphyses have not become incorporated with the shafts of the long bones; the joints are not fully developed; the chest has by no means attained its full capacity; and the organs of the body, in general, are immature. So it happens that, at this age, it is useless to expect him to be in good condition after long-continued exertion, or to undergo privations which are nothing to the man of mature years and strength. At this period of life, he is still in the growing stage and needs all the energy of his body to bring the organism to completion, and the influences which mature soldiers contend against with varying degrees of success, namely, vicissitudes of weather, long marches, hard work in trenches, possible overcrowding in barracks and camps, poor ventilation, and poor and insufficient food, send him very quickly to the hospital." [1]

"Taken between the ages of 18 and 20, and drilled and trained with due regard to his immaturity and limit of endurance, the recruit often shows great progress in general development within the first year, particularly if, before enlistment, he was poorly fed, clothed, and housed, and engaged in an indoor occupation. His work should be moderate in the beginning and only gradually increased, since changes for the better in the human body can not be brought about suddenly like those for the worse, induced by attempting to do too much at the outset. Since his lungs, heart, and blood-vessels are not yet fully developed, he can neither go through the manual nor cover ground like a seasoned soldier. The heart is called on by the new and unaccustomed exercise to contract at a greater rate than had been its habit and the recruit soon becomes 'winded.'" [1]

While it has been the experience that men below 20 or 22 are too immature physically to make good soldiers, this does not hold good in the case of sailors, whose training and work do begin in accordance with his strength, and is gradually increased in demands on the newly added growth; this training occurs under the most hygienic surroundings. The life on board ship and at sea is one filled with novelties, and an open-air existence and the duties incident to this life might well be compared to a course in physical culture, whereby there is obtained a broadening of the shoulders, deepening and expanding of the chest, and a general symmetrical rounding out of the muscular frame. The change in the first year is remarkable; natural growth can claim but a portion of this rapid development.

One must not lose sight of the fact that after enlistment the recruit receives the same watchful care as a new-born babe, or blooded animal. His bathing-hours are prescribed, his clothes selected for him and their cleanliness assured by frequent careful inspections, and his food, likewise, is provided with the same care and regularity.

Men over 35 may reenlist, and more leniency for minor defects is exercised. "An enlisted man, not under treatment, but with infirmities contracted in the line of duty, not such as to prevent his performing the duties of a soldier, may be reenlisted, since it is recognized that what he may lack in some minor particulars in soundness may be counterbalanced by experience and habits of discipline." [1]

The examination is of necessity searching, since disability not only interferes with the best work, but there is in some cases the danger of carrying contagion to others. Every recruit is immediately vaccinated, and kept in the detention camp three weeks before he is permitted to come in contact with the other men. Every deviation from the normal must be noted for a final estimate, or summing up, in accordance with the navy standard.

In the British army defective development causes the greatest number of rejections, then defective vision, and third, diseases of the circulation. For the last quarter here in St. Louis, out of 689 applicants, 169, or 23 per

3. Report of Surgeon-General, United States Navy, 1909.
4. Instructions for Medical Officers, U. S. Navy, 1909.

cent. were accepted. Of these 689, 140 or 20 per cent. failed because of poor physique (underweight). The following rule is followed: Up to 5 feet 7 inches the weight should be twice the height or 2 pounds to the inch, and for every additional inch 7 pounds more in weight must be added. The chest measurement is a little less than one-half the height. The biggest men are the most deceptive in appearance, and can not be depended on for endurance; far from it. Men of the laboring class are often properly proud of their muscular development, and with great self-assurance undergo the physical examination, in many cases only to be bitterly and perplexedly disappointed.

Of the 689 applicants 102 or 14 per cent. failed because of defective vision.

"No applicant should be recommended as qualified for the rating of gun-pointer who can not read with the right (or aiming) eye at 20 feet the line on Snellen's test-card, which is normally seen at 15 feet (i. e., 20/15 vision). The minimum of 20/20 vision should be required with the eye not used in aiming. The test-card should be well illuminated."[4]

It is astounding how great is the amount of ignorance due to faulty eye-sight alone. Some men attempt to read the test-card twice with the same eye or to memorize the letters; one applicant with 3/20 vision in each eye had never worn glasses. Of the 689 applicants 13 per cent. were rejected for flat-foot, 6.5 per cent for heart affections, 5.5 per cent for defective teeth, and 4.5 for color-blindness.

For Asiatics, enlisted as mess attendants, the bars must be lowered from the American standard of physique to one corresponding with the former race, though one should always be on guard against such diseases as plague and beriberi. The Filipino is of smaller stature and the requirements are that young men of 18 to 19 years of age must weigh 105 pounds (15 pounds lighter than the American average) and have an expansion of 2 inches: those men of 21 years of age must be 62½ inches in height, must weigh 110 pounds and have a chest mobility of 2½ inches, in sharp contrast to the American of the same age, who must weigh 18 to 20 pounds more.

Men for the hospital corps must be superior to the average applicant; a grammar-school education is required for the men intended to perform a special and responsible work, to assist the surgeons in his varied duties, acting as his first assistant or anesthetist during major operations; in fact, their duties correspond to those of the male trained nurse of our professional brethren practicing ashore. To make assurance doubly sure, the recruit must sign a clean bill of health: "I believe myself to be physically qualified to perform the duties of the rating in which I may be enlisted." Likewise, the examining surgeon certifies that "I have carefully examined, agreeably to the regulations of the Navy, the above-named recruit, and find that, in my opinion, he is free from all bodily defects and mental infirmity which would in any way disqualify him from performing the duties of his ratings, and that he has stated to me that he has no disease concealed or likely to be inherited."

The one essential requirement for the best results in recruiting is the strict adherence to a fixed, invariable, systematic routine method of examination.

The medical officer must possess the proper spirit for recruiting to secure men physically good; he must exercise good judgment in the case of men on the borderline, never forgetting the important reasons for giving the government the benefit of all doubt, being very careful to note all minor defects which do not necessitate the rejection of the applicant. All kinds of influence are brought to bear on the judgment of the examining surgeon, aside from the question of competition of the recruiting officers to make a record in number rather than the standard of recruits of those enlisted. Physicians in civil practice, as well as politicians at times make it very emphatic how desirable it is to the government to obtain the services of their sons or friends.

The opposite state of affairs is illustrated by a pathetic though rather amusing instance: A young man of 21 desired to enlist while we were at Savannah, Ga. The mother called on board and, with a distressing flow of tears, asked how her son could be enlisted when the family physician sent word that he was physically incapacitated. There being no defects, the boy was qualified physically, much to his own delight. The father came on board with a gun to compel, in this gentle way, the non-acceptance of his son. The boy decided to run away from his family and of his own volition, being of age, joined his chums at the railroad station. We sailed down the coast and up the Mississippi river as far as Cairo, Ill., making numerous stops for the purpose of recruiting, and in the course of about four months we returned to Savannah, Ga. Meantime the young man had sent home photographs and graphic accounts of the fascinating life of the training station. The first day in port the mother came on board and, with similar tears, begged us to enlist her younger son, who, by the irony of fate, failed to pass the physical examination.

It has been demonstrated repeatedly that physicians ashore do not obtain the best results in recruiting, simply because they have not had the peculiar training which is acquired only under actual service conditions.

After this brief review of some of the more salient features of the subject of recruiting for entrance into the United States Navy, I believe that all will agree with me that good powers of observation, a keen eye, mental alertness, considerable knowledge of human nature, complete understanding as to service conditions and the calls that are made in each rating, besides a proper interest for the service are prerequisites in the medical officer who is detailed for the recruiting office, where, by far, the major part in the way of preventive medicine is accomplished for the navy.

Yaws Transmitted by a Fly.—Dr. E. W. Gudger (*Science*, Nov. 4, 1910) calls attention to an old recorded observation that yaws is transmitted by a fly. The traveller, Henry Koster, in his account of travels in Brazil (1809-1815), gives a description of the disease, yaws, in which he says: "This horrible disorder is contracted by inhabiting the same room with the patient, and by inoculation; this is effected by means of a small fly, from which every precaution is oftentimes of no avail. Great numbers of the insects of this species appear in the morning, but they are not so much seen when the sun is powerful. If one of them chances to settle on the corner of the eye or mouth, or on the most trifling scratch, it is enough to inoculate the bobas, if the insect comes from a person who labors under the disease." In commenting on this Gudger says that it will be noted that, while Koster is not able to give the specific name of the fly, he definitely declares it to be a certain fly with well-marked characters. It may be well to add that the disease called "bobas" throughout Brazil, is identified by Koster himself as identical with the "yaws" prevalent in Venezuela and the Guianas.

THE CONSERVATIVE UTILIZATION OF THE WASSERMANN REACTION

D. M. KAPLAN, M.D.

Director of Laboratory, Neurological Institute, New York; Serologist to the Montefiore Home

NEW YORK

The statements in this communication are based on a study of over 3,200 reactions, and in view of the confusion and uncertainty that still prevail in the minds of many physicians as to the significance and value of the Wassermann test I am hopeful that this work will tend to render clear some obscure points and enable us to handle the question of syphilis from a serologic point of view with greater accuracy than heretofore. The impression that I have received from almost two years' work with this reaction and the benefits that physicians and patients derive from its application is that the value of the Wassermann test for diagnosis and therapy has been greatly overrated. It still remains an interesting problem for the biologists to solve, but so far their work has not been decisive enough as to enable the practicing physician to rely implicitly on the outcome of a Wassermann test. I do not wish to discredit the work of Bordet and Gengou, nor is it my intention to belittle the application of the phenomenon of complement deviation to the diagnosis of syphilis. I do, however, maintain that the promiscuous use of the test by insufficiently instructed physicians is as dangerous as the use of reports from tyro serodiagnosticians. I lay particular stress on this point, because such use to my knowledge has been the cause of serious damage. The accompanying tables containing the material gathered during twenty months of work with the Wassermann test owe their scope and variety to the kind assistance of Dr. Abrahamson and the staff of physicians at the Montefiore Home. Its completion and the study of the effects of mercury on tabes was accomplished at the Neurological Institute, whose medical officers were ever ready to furnish necessary data for this work.

CONSIDERATION OF TABLES

The first and largest group of cases analyzed was composed of cases of locomotor ataxia. The Wassermann reaction in this disease, contrary to the still prevalent conception that all tabetics are syphilitic, was positive in 88 per cent. in one group of cases and 44 per cent. in another group. In considering tabes dorsalis one must not lose sight of the patient's condition, whether in the active tabetic state or in the quiescent. The physician's disappointment is quite evident when a negative Wassermann is reported on a patient with tabes; it is the conviction of many physicians that every tabetic ought to give a positive reaction, as they believe syphilis to be the only etiologic factor concerned in this disease. The tables show that over 300 cases of tabes dorsalis were analyzed and on an average only 66 per cent. of cases gave a positive outcome. Whatever the substance may be that is responsible for a positive Wassermann reaction in a patient with tabes, it may be taken as a sign first, that his tabes is of syphilitic origin, and secondly that if active manifestations are present mercury is indicated. The contention makes it quite evident that the knowledge of the tabetic manifestations is very essential to successful therapy. Whenever a serum is analyzed from a case of active tabes (crises, girdle, shooting pains) the reaction is usually positive (88 per cent.). This sig-

TABLE 1.—DISEASES OF THE NERVOUS SYSTEM

	Cases. No.	Positive. No.	%	Negative. No.	%
Tabes, total cases	306	198	66	108	34
Tabes, quiescent stage	249	110	44	139	56
Tabes, active stage	57	51	88	6	12
Paralysis agitans	12	0	0	12	100
General paresis	64	56	88	8	12
Pseudohypertrophic muscular dystrophies*	15	0	0	15	100
Syringomyelia	4	0	0	4	100
Progressive muscular atrophy	2	0	0	2	100
Multiple sclerosis	16	0	0	16	100
Hemiplegia	118	8	7	110	93
Acute anterior poliomyelitis	5	0	0	5	100
Tumors of brain	14	2	12	12	88
Alcoholic neuritis	8	0	0	8	100
Lead neuritis	4	0	0	4	100
Bell's palsy	3	0	0	3	100
Sciatica	8	2	25	6	75
Symmetrical adenolipomatosis	3	0	0	3	100
Adiposis dolorosa	2	0	0	2	100
Myasthenia gravis	1	0	0	1	100
Amyotrophic lateral sclerosis	4	0	0	4	100
Myelitis	8	2	25	6	75
Erb's luetic spinal paralysis	1	1	100	0	0
Spastic paraplegia	11	3	27	8	73
Tumors of spinal cord	9	2	22	7	98
Chiasm disease	4	0	0	4	100
Ophthalmoplegia	3	0	0	3	100
Optic nerve atrophy	4	0	0	4	100

* In two instances the parents were also examined with negative results.

TABLE 2.—DISEASES OF THE SKIN AND GENITOURINARY ORGANS

	Cases. No.	Positive. No.	%	Negative. No.	%
Scleroderma*	5	5	100	0	0
Psoriasis	26	1†	4	25	96
Furunculosis	4	0	0	4	100
Rhinoscleroma	2	0	0	2	100
Lepra §	8	8	100	0	0
Primary lues, less than 3 weeks' duration, no Hg	101	90	89	11	11
Primary lues, less than 3 weeks' duration, after Hg. treatment	20	12	60	8	40
Primary lues, more than 3 weeks' duration, no Hg	74	72	97	2	3
Primary lues, more than 3 weeks' duration, after Hg. treatment	36	26	72	10	28
Secondary lues	340	296	87	44	13
Tertiary lues	290	212	73	78	27

* Another patient was examined with a negative result, but the diagnosis of scleroderma was uncertain.

† In the positive case the patient admitted syphilis.

§ These were all cases of long duration.

TABLE 3.—DISEASES OF THE VEGETATIVE ORGANS

	Cases. No.	Positive. No.	%	Negative. No.	%
Aortic aneurism	16	12	75	4	25
Aortic stenosis	2	0	0	2	100
Tricuspid stenosis	1	1	100	0	0
Obliteration of anterior tibial	1	0	0	1	100
Chronic endocarditis	38	7	19	31	81
Pulmonary tuberculosis	280	6*	..	276	..
Asthma	24	1†	4	23	96
Chronic bronchitis	28	0	0	28	100
Tumors of the lung	6	4	67	2	33
Tumors of the liver	3	2	67	1	33
Tumors of the kidney	2‡	0	0	2	100
Tumors of the esophagus	2	0	0	2	100
Tumor of the iris	1	1	100	0	0
Tumors of the sternum	2	0	0	2	100
Noma	3	0	0	3	100

* In 2 of the positive cases the patients were cured and at no time showed tubercle bacilli. In the other 2 cases tubercle bacilli were present; also a history of lues.

† In the positive case the history was suspicious.

‡ At the autopsy one tumor proved to be a hypernephroma, the other a metastatic carcinoma.

TABLE 4.—MISCELLANEOUS DISEASES*

	Cases. No.	Positive. No.	%	Negative. No.	%
Exophthalmic goiter	10	0	0	10	100
Arthritis deformans	28	4	14	24	86
Gastric anacidity	15	10	67	5	33
Diabetes	36	8	25	28	75
Pernicious anemia	2	0	0	2	100
Polycythemia	4	2	50	2	50
Colitis	8	0	0	8	100
Gout	10	0	0	10	100
Acute articular rheumatism	18	0	0	18	100
Hodgkin's disease	4	0	0	4	100
Hemophilia	3	0	0	3	100
Arteriosclerosis basis cranii	14	4	28	10	72
Raynaud's disease	6	2†	33	4	67

* Of 540 cases analyzed for diagnosis, unmistakably positive findings were obtained in 80 per cent. Weakly positive reactions were obtained 8 times in cases which most likely were not luetic; 6 of the patients had jaundice.

† The 2 positive cases improved with iodids.

nifies that the disease is most likely of a luetic etiology and that mercury will not injure the patient. In case the reaction is negative in a patient with active manifestations it is safer not to use mercury, as in such a case the cause of the tabes is likely not syphilis. In patients with straightforward tabetic signs without active manifestations the reaction is positive in only 44 per cent., as I found, and antisyphilitic therapy is as a rule of no avail. It is quite evident that the ataxia and other symptoms the result of the degenerative process can not be influenced by drugs. It is consequently a better policy to leave the patient alone even if the Wassermann reaction is positive, provided he is in a state of comparative comfort.

I have examined fifty-one serums from active tabetics and found the reaction positive in forty-four, *i. e.*, 88 per cent. It is my belief that this form of exudative tabes is due to syphilis when the reaction is positive and that in about 12 per cent. of active tabetics the etiologic factor in case of a negative Wassermann still remains an open question. As the etiology of tabes is an important factor from a therapeutic and sociologic point of view, it is to the credit of the Wassermann test, which materially enhanced our knowledge in this direction and brought us considerably nearer to the truth than we were before the era of serodiagnosis in syphilis.

The results of my work support the old contention of von Leyden, who is against the idea that all tabetics are infected with syphilis, and tend to disprove the teachings of Erb, who believes that they are all of luetic origin. The administration of mercury in any of its forms in the case of an active tabetic should always be preceded by a careful Wassermann reaction and the drug used only when the result is positive.

It came to the notice of Dr. Joseph Fraenkel that some forms of tabes were decidedly harmed by mercury and that the course of the disease was markedly aggravated. I was enabled to follow this experience with the Wassermann reaction and found that in patients with the active form of the disease with a negative reaction mercury did no good and in some cases harm. It has been clinically observed that the Duchenne form of tabes is made decidedly worse by the use of mercury. I may therefore say with justice that if a clinically undoubted active tabes gives a negative Wassermann reaction, it may be taken, in view of what has been said before, as better to abstain from antiluetic treatment. Furthermore, the Wassermann test intelligently used will help us to solve more definitely the differentiation between the real tabes and the genuine general paresis of the old type, from the so-called pseudotabes and pseudoparesis and the so-called mixed forms, placing them all under one category of syphilis of the cerebrospinal system. Applied to therapy, the Wassermann test points out the indication for or against the use of mercury in the exudative types and the advisability of treating degenerative tabes is left to the clinician. As a rule the uselessness of mercury in these cases is conceded and the irreparability of the diseased tissues is accepted.

THE WASSERMANN REACTION AND HG IN TABES

Active Exudative Tabes.—Reaction positive, Hg indicated. Reaction negative, Hg contra-indicated.

Quiescent Degenerative Tabes.—Positive or negative there is very little that Hg can do to restore function.

To come to the conclusion as to the etiology of a case from the therapeutic efficiency of mercury is also erroneous. In the case of tabes we know that improvement may follow any and no treatment. It is advisable not to form an opinion as to the etiology of a disease from the accepted therapeutic specificity of a drug like mercury.

A patient in the Montefiore Home with all the signs of a brain tumor was treated by Dr. Fraenkel some fifteen years ago. The mercury apparently did some good and the etiology at that time was uncontrovertibly established. After three years of rather good health the patient succumbed to a relapse of the previous condition and at the autopsy showed a sarcoma from the thalamus to the fourth ventricle.

Another case (from the service of Dr. Spiller, to whom I am very thankful for this fact) showed a positive Wassermann reaction from a very competent worker. In this case also the patient was suffering from a brain tumor. The reaction was the occasion of vigorous mercury treatment which did no good whatsoever. After a short time the patient died and the autopsy in this case revealed a gliosarcoma of the brain and on abdominal examination a gumma of the liver. This warns one not to be too much dependent on laboratory reports and never to permit one's clinical acumen to be eclipsed, no matter how trustworthy the laboratory worker. In the above case it may have been of vital importance to have an operation performed if the possibility of a dual cause were recognized; mercury was given the preference as a result of the Wassermann reaction. This experience teaches a lesson: never to allow the Wassermann test to decide for or against an operation.

In general paresis mercury is as useless as in degenerative tabes. The poison that brings about the changes in the nervous system is very often stimulated to increased energy by the administration of mercury. I know of two instances in which the patients were reduced to invalidism, although previous to the use of mercury their vegetable organs were in a perfect condition. Two months after the use of the drug the patients died. In both the reaction was positive. The surprising therapeutic results with mercury in general paresis and the reported cures need closer investigation. There are very few distinctions between some cases of general paresis and some forms of syphilis of the brain and spinal cord. It is not at all too far-fetched to consider these improvements and cures as having been effected on patients suffering from syphilis of the brain and cord. The Wassermann reaction in these cases does not shed any light on the condition although the Munich school claims to be able to differentiate between the two clinical states. The only distinction that Plaut says can be found in the cerebrospinal fluid when a Wassermann test is performed, is that the reaction is always negative in syphilis of the brain and cord, and positive in general paresis.

Among the fifteen cases of pseudohypertrophic muscular dystrophy of various types all reacting negatively, the parents were examined in two instances, also giving a negative result.

It is of interest to note the positive results obtained in scleroderma. The fact that the reaction was positive does not in the least establish the etiology of this skin condition. It is personally known to me that mercury used for a long time in no way influenced the course of the disease.

The large percentage of positive results (75 per cent.) in aortic aneurisms greatly reflects on the cause of this disease. The predilection of involving blood-vessels is

a well-known peculiarity of the syphilitic incitor, and the improvement that follows the timely administration of mercury in some cases tends to confirm the etiology in many instances.

In pulmonary affections the presence of the tubercle bacillus decides the etiology. I examined 280 cases and found the reaction six times positive. Two patients at no time showed the tubercle bacillus, and improved after mercury; two others also showed the presence of the bacillus; of these one improved and one died. An autopsy showed tubercles and a gumma in the lung and endarteritis luetica of the larger blood-vessels, especially the aorta. The cases of gastric subacidity gave a positive outcome in ten serums. These patients showed an increase in acid values after mercury. The positive Wassermann reaction need not introduce the idea that lues was the cause for the subacidity. I wish to thank Dr. W. G. Lyle for pointing out to me these facts, who at the time when these tests were made did not wish to express an opinion as to the significance of the coincidence. In a few cases a history of lues was obtained.

I encountered four cases of arthritis deformans with positive reactions; one of these improved after mercury administration; the course of the other three is unknown to me.

I shall now endeavor to form a conclusion as to the value of a negative Wassermann obtained from a study of the behavior of the test in patients with primary lesions and patients with symptoms bordering on this period.

THE VALUE OF A NEGATIVE WASSERMANN TEST

The table shows the percentage of positive reactions in primary lesions and in cases bordering on this period to be rather large. It is this class of patients that furnishes the greatest number of positive results. A negative outcome in a patient showing a primary lesion, or clinical signs suggestive of the symptoms of the stage bordering on the ulcus durum period ought to put the physician on guard as to the true etiology of the symptoms. A negative reaction during this period carries great weight, as the reaction is usually strongest during this period, and with even little technical knowledge usually gives a strong positive result. Comparing the chances of error from a clinical and serologic point of view it seems to me that it is much easier to err clinically than serologically, of course bearing in mind the stage of the disease. I would suggest that in such a case in which the reaction is negative, in view of the above symptoms, whenever the patient's condition permits it the physician should pursue the orthodox method of waiting until more evidence for or against syphilis appears. This is especially recommended in dermatologic practice, bearing in mind at the same time that waiting gives the spirochetes a firmer hold on the patient's constitution. I also believe that it is less harmful to let the patient wait than to subject him at once on meager evidence to the influence of mercury and have him ever afterward carry the odious knowledge of having been treated for syphilis. There are many such patients who years later consult a physician for unimportant ailments and when the possibility of syphilis is inquired into as a matter of routine their experience of the past gives a dominating impression and potassium iodid is prescribed. There are many such cases unjustly stamped luetic. The practice of waiting for corroborative evidence is a useful one because, first, we will not treat an innocent lesion for syphilis, and secondly, we may be able better to judge the value of Wassermann reactions. The experiences with Wassermann test brought me fourteen such patients. All of these were told to wait. In six cases undoubted signs of syphilis developed; the remaining eight at no time showed any symptoms suggestive of specific disease, in spite of the fact that no specific treatment was carried out. It is therefore my conviction that, whenever under the above circumstances it is possible to wait without placing in jeopardy the patient's health, this delay should be employed.

There is no test at hand to-day, no matter how carefully performed, that will infallibly demonstrate the true state of affairs and especially with such a treacherous disease as syphilis. Since the introduction of the Wassermann test many patients come to the serodiagnostician to ascertain if the disease is out of their system. They admit that long ago they had an eruption or a sore and were placed on mercury. The physician wishes to ascertain the efficiency of his treatment. As a rule most of these patients react negatively; first, because not sufficient time has elapsed since the last administration of mercury, which tends to negative the reaction; secondly if sufficient time did elapse, it may not be at all impossible that the lesion or eruption was not specific. In the absence of any help beside one's clinical training, before the days of the Wassermann reaction, it was very easy to make a mistake. It is gratifying to know that to-day, thanks to the Wassermann test, very few innocent lesions are submitted to antiluetic treatment and restrictions, and only those are obliged to carry the knowledge of having syphilis who were really infected.

SYPHILOPHOBES

There are some patients who take up the physician's time with unfounded fears as to the condition of their blood. Such patients are in great fear of having had remotely a syphilitic infection. A few come with ready-made diagnoses and bring in evidence the statements of a physician who told them they had the disease. If such a patient presents clinically no signs of syphilis, in any of its stages, and if this present opinion issues from a syphilologist, the reassurance to the patient is greatly enhanced when the report of the Wassermann reaction is negative. My point is carried if it is understood so far, that the diagnosis for or against syphilis clinically, and the negative or positive laboratory reports are of decisive significance only when used together.

As to the constancy of the Wassermann reaction in syphilis, the last word has not been said; as far as frequency and sharpness are concerned old leprosy cases present a much more definitely positive reaction than old syphilis. It is worthy of mention at this juncture that the older the leprosy the more marked the reaction, unlike the majority of cases of old lues. What there is in common between lues and leprosy is a speculative subject; the future may find the link that makes both diseases interfere with hemolysis while using the same inhibitory extract.

THE WASSERMANN REACTION AND ANTILUETIC THERAPY

If in a well-treated case of syphilis a previously positive reaction becomes negative, it is permissible to draw a favorable prognosis therefrom. It is certainly gratifying to note the disappearance of the Wassermann reaction, provided the clinical manifestations go hand in hand. A negative Wassermann in a patient presenting clinically vestiges of lues is not to be considered conclu-

sive. It is much more rational and useful to obtain a cure clinically first and to have the laboratory corroborate the cure with a serum reaction. In tertiary syphilis a negative reaction is of no value after treatment, except when the patient's serum is so negative that when added to another positive serum the combined mixture will result in a negative outcome. The test is performed as follows:

Five hundredths of a c.c. of an established positive luetic serum are placed in a test-tube and mixed with 0.2 c.c. of the negative luetic serum to be tested; the mixture is incubated for half an hour and complement added. This is incubated another hour, and cells and amboceptor added. Observations are then taken.

A somewhat analogous method was recently advocated by Brauer.[1] The author omits the study of the effects of the mercury serum (serum from patients without syphilis who received mercury injections) from normal individuals on luetic serums, a study to which I refer in a recent article.[2] The consideration of the Wassermann reaction from the therapeutic standpoint is not exhausted by the few examples cited. It must be borne in mind that some tertiary syphilitic manifestations can never be improved by antiluetic treatment and it must not necessarily follow that a luetic process is at a standstill because of a negative Wassermann reaction. I know of patients with tertiary syphilis in whom a negative reaction could never be obtained, no matter how thoroughly mercury was administered.

EFFICIENCY OF WORKERS

It is not to be denied that the Wassermann reactions reported on by beginners in insufficiently equipped laboratories certainly did some harm; even the best work from laboratories equipped for the sole purpose of performing the reaction loses much of its value when used promiscuously by physicians who look for too much help from such reports. I know of instances in which negative reports decided the etiology of a disease without further clinical investigation. Such confidence is met rarely to-day, as physicians begin to appreciate that even a positive Wassermann reaction does not always spell syphilis.

It becomes the duty of everyone actively engaged in the performance of the reaction to render clear certain shortcomings of the test and to place clearly before the physician who is to use the submitted report, the significance of a positive, a weakly positive and a negative reaction, and to what extent the test can be relied on as a whole. It is needless to emphasize that such advice should hail from matured workers only, who not only know how to perform the test, but whose enthusiasm has cooled as the result of an extensive experience. It is to be granted that the best workers make mistakes; some are pardonable, others not; but when we consider the delicate adjustments of the test, it is no wonder that different serologists report differently on the same serum. The clinicians as a rule, in the case of conflicting evidence, form their own opinion and treat the condition on its merits.

A negative report on a ripe syphilitic serum, however, does reflect on the abilities of the serologist (considering the difficulties of the reaction) as well as positive report on a serum from a healthy person. It is important to bear in mind that the value of a negative Wassermann reaction for diagnosis, except in the instances mentioned before, is almost *nil;* it is different when the report is requested to ascertain the therapeutic efficiency of a treatment. The patient's well-being and the time elapsed since the last use of the drug must be noted. There is generally an error committed in sending patients to the laboratory without stating the time elapsed since the last treatment. A negative Wassermann reaction together with a complete absence of subjective and objective symptoms, with treatment as remote as possible (six months or more) is the ultimum bonum the clinician desires to attain.

The instructions to such patients are to have them report at stated intervals for a physical examination in order that the least deviation from the normal may be investigated with the help of a Wassermann reaction. Discharged patients should be systematically supervised with the help of the laboratory; the reactions should be kept on record, and the patients giving persistently negative results may be considered as practically cured. Such patients may even be permitted to marry. Some physicians use the Wassermann test for therapy only and depend very little on its help for diagnosis. In many instances the test is performed with the sole intention of reassuring the patient.

READING AND REPORTING RESULTS

It is very sad but nevertheless true that our knowledge of the reaction has not progressed far enough to make all work on these lines uniform in all laboratories. In fact, the same serum if sent to a number of laboratories will result in as many different interpretations. These conflicting reports fundamentally shake the confidence of the clinicians who are to use them.

There is a movement on foot in New York to bring together practical serologists and render their methods for work and standardization more uniform than heretofore. Such endeavor, I believe, will bring about more accurate work and less conflicting results. It may perfect the methods so that the physicians will be able to use it more extensively, especially for therapeutic purposes. It may also change the conception of the syphilitic etiology of some diseases; for instance, locomotor ataxia. For the present, I believe that the only way of rendering useful service to the cause of serodiagnosis is to employ in the case of the Wassermann test the original method plus another modification and to become thoroughly conversant with its peculiarities. To minimize chances of error it is best to perform the reaction twice with each method and to report results after the elimination of every reaction that is not unquestionably positive. I wish to emphasize particularly this manner of coming to conclusions and to disregard any form of reading results and reporting to the doctor in an unintelligible and confusing manner. I am referring to the attempt made by some workers to designate the results of their reactions as 80 per cent. or 90 per cent., etc. Citron had some such arrangements using a certain number of crosses (+ + +) and dashes (+ —) or (+ — —) to impress on physicians the intensity or weakness of his results.

I wish to be placed on record as considering this form of arriving at conclusions quantitatively as absolutely unreliable, for the simple reason that, no matter how uniform the every-day work of a serologist, he will on many occasions report differently on the same serum. Irrespective of this, we are not at all advanced enough

1. Brauer: München. med. Wchnschr., 1910, No. 17.
2. Kaplan, D. M.: The Theoretical Consideration of the Wassermann Reaction and Its Practical Application, Jour. Am. Med. Sc., July, 1910.

nor are our methods uniform enough to justify the adoption of such a meaningless scale for recording the results of Wassermann tests. While one will have 80 per cent. another will have 90 per cent. and a third something different again. I believe that the answer "positive" or "negative" for diagnostic purposes is all that our colleagues expect from us and that a confusing report of 80 per cent. positive, especially where a definite answer is expected, will tend only to mislead the physician. When the reaction is performed to ascertain the effect of treatment no patient should be discharged until the serum behaves like a normal serum. The serologists who wish to express their results numerically may be excused in the case of therapeutic tests, as physicians are sufficiently instructed in the majority of instances to know that only the entire disappearance of the reaction from the serum is of value in successful therapy.

The method of forming conclusions is an important qualification of every serologist and no one ought to consider himself thoroughly competent to work with serum unless this degree of perfection is attained. Luckily it is not so dangerous to make a negative report in a syphilitic individual as it is to make a positive report in an innocent patient. I therefore state again that it is proper to perform the reaction twice, using the original Wassermann test and, as I have been in the habit of doing, also a Noguchi test. These tests are best repeated on the following day and anything that is not distinctly positive ought not to be used for diagnosis. No dubious results ought to be reported. It is every time better and by far safer to admit that the result of the Wassermann reaction is inconclusive and that another reaction ought to be performed. In case the reaction is performed for therapy and the serum does not behave like an absolutely normal serum (negative) the patient ought to be treated more and have his serum reexamined after a suitable time has elapsed.

SUMMARY

1. When a serum is submitted for diagnosis the laboratory report should read "negative" or "positive." No qualifications as to degree are necessary.

2. For diagnostic and therapeutic purposes the laboratory report should always be collated with clinical findings.

3. Negative reports are of value in therapy.

4. Treatment should be stopped for four to six months after the patient becomes clinically and serologically normal and at the end of this period the test should be repeated.

5. All patients cured of syphilis ought to have for preventive purposes a test performed twice a year.

6. Any reappearance of the reaction even in traces is to be dealt with as under Paragraph 4.

7. Some patients who have had syphilis never lose the positive reaction in spite of any therapy.

8. A negative report obtained on a serum from a suspicious case should defer treatment until the course of the disease decides the etiology, provided there is no danger in delaying treatment.

9. With a positive report one must not lose sight of the possibility of another disease being present besides syphilis.

10. In my experience advanced scleroderma and old leprosy are more positive than old syphilis, quantitatively and qualitatively.

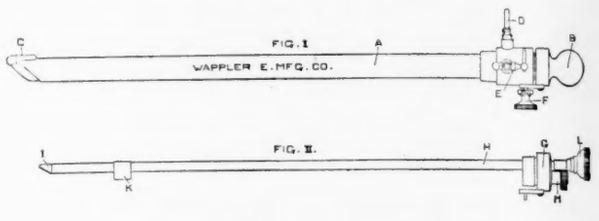
11. In active tabes 88 per cent. and in quiescent tabes 44 per cent. of positive reactions were obtained.

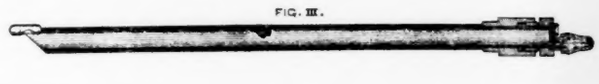
THE COLONOSCOPE

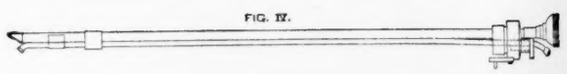
HEINRICH STERN, M.D.
NEW YORK

I have devised an instrument for the inspection of the sigmoid flexure which possesses a number of advantages over other instruments intended for the same purpose. The following description will prove this contention:

Figure 1 represents the sheath with obdurator. A is the sheath of ⅝ inch diameter and 12 inch working length. B is the obdurator, C the lamp. The wiring for the lamp is armored in the wall of the tube. The conduit projects neither on the inside nor on the outside of the sheath. The lamp itself is loaded in a capsule with a water-tight screwtop and a glass window. The capsule projects somewhat beyond the distal opening of the sheath, and is of material assistance in pushing aside rectal folds in the vicinity of the mouth of the sigmoid flexure, and may be utilized as a guide. The light arrangement is a novelty in all rectal examining devices. It permits the use of a telescope or optical system to see at right angles, thus enabling one to inspect the first and even the second portions of the flexure. D is an improved electric coupling with on and off switch; this coupling is very reliable. E is a stopcock, to which may be attached the air-inflating apparatus.







F is a locking and releasing device for the conical fittings of sheath and optical system. Its function is to lock and separate the sheath and its members while the instrument is in position without jarring, and to avoid discomfort to the patient.

Figure 2 is a double optical system; through the long tube one is enabled to see at right angles to the axis of the instrument, and through another eyepiece the portions in front are magnified, which facilitates their minute inspection. G is the cone fitting in sheath. H designates the telescope tube. I is the objective, giving a right sided and upright image. K shows a circular spring-holding tube, with lens system on one side of the tube. L is the eye-piece of the optical system, and M the eye-piece, which is removable and gives a magnified view of the parts straight ahead.

Figure 3 is a longitudinal section of the sheath, with an end for air-tight closing. It has a lens for bringing the object at the distal end of the tube nearer the operator's eye, and a rubber nipple admitting instruments for operation and application while the rectum and flexure are under air distention.

Figure 4 illustrates a lens system, with a tube bent on the far end for guiding and deflecting applicators into the flexure.

250 West Seventy-Third Street.

Military Versus Medical Heroes.—It is a curious commentary on our civilization of to-day that we litter every public place with granite tributes to brigadiers, while the families of these men [Reed, Carroll, Lazear and others] beat at the doors of Congress for adequate support and the crowd passes thoughtlessly by their graves.—Martin Cooley, *Jour. Outdoor Life*, October.

EXOPHTHALMOS IN BRAIN TUMOR

WITH REPORT OF EIGHT CASES *

T. H. WEISENBURG, M.D.

Professor of Clinical Neurology, Medico-Chirurgical College; Neurologist to the Philadelphia General Hospital

PHILADELPHIA

Little emphasis has been placed on the occurrence of exophthalmos in brain tumor if the literature on this subject is taken into consideration, and yet in the clinical description of such cases it is not infrequently mentioned. My attention was particularly directed to this subject by a number of cases of brain tumor in which exophthalmos was a prominent symptom, and in a cursory examination of the histories of patients with brain tumor which I have observed during the last five years, protrusion of the eyeballs was present either unilaterally or bilaterally in ten, five with necropsy. Of these, eight are here reported.

With the exception of isolated instances, the only extensive papers on the subject are by G. Flateau,[1] and, to a less extent, by Rosenblath,[2] who together collected twenty-four cases of tumor accompanied by exophthalmos. The neoplasms were located in practically every part of the cranial cavity: Six were in the frontal lobe, two in the hypophysis, one in the pineal gland, one a basal tumor involving the pons, medulla and cerebellum, two in the cerebello-pontile angle, one in the pons, two in the cerebellum, two in the temporal lobe, one in the right lateral ventricle, and six were instances of internal hydrocephalus.

The nature of the growths varied, consisting of glioma, sarcoma, neuroma, endothelioma, psammoma, and echinococcus, and it is evident from this that the character of the tumor probably had no direct bearing on the occurrence of exophthalmos any more than that certain forms of tumor may give metastasis.

In some of these cases the orbits were examined, and in others the nature of the growths was such as to preclude the opinion that there was metastasis to the orbital cavity. Exophthalmic goiter was excluded in all.

The exophthalmos was bilateral in all the cases of internal hydrocephalus and in those tumors in which the lesion involved both sides of the brain, with the exception of one basal tumor. In the unilateral growths the ocular protrusion was one-sided. In all the protrusion was on the side of the lesion, with the exception of one cerebello-pontile tumor.

With the exception of the above no attempt is made to quote the cases from the literature. Of my personal cases only a brief abstract of the histories is given.

REPORT OF CASES

CASE 1.—*Gliomatous tumor of lateral and third ventricle compressing and implicating one optic thalamus with bilateral exophthalmos.*—Previously reported.[3] The patient was Miss M—n, a girl about 20, who presented, as one of the early symptoms, a tendency to write in a perpendicular direction instead of horizontally, this being followed by gradual loss of vision. Examination showed a marked bilateral choked disk. The symptoms of intracranial pressure were very prominent. When she was examined by me, she had bulging of both eyeballs, with ptosis and deviation of the eyes in a downward direction, paralysis of associated ocular movement, and of convergence upward, less to the right and left, and least downwards. At necropsy there was found a tumor of the left lateral ventricle, which grew into the third through the foramen of Monro, and compressed the optic thalamus. All the symptoms which she presented were readily explained with the exception of the exophthalmos.

The tumor was a vascular glioma. In the process of its growth from the lateral to the third ventricle it compressed the choroid plexus, the velum interpositum and the veins of Galen, and it is probable that it caused a stasis in the cavernous sinus, although unfortunately no orbital examination was made. She had, however, a congestion of the veins in the eyelid, with edema and great pulsation of the vessels of the neck (Fig. 1).

CASE 2.—*Tumor of the third ventricle, compressing both optic thalami with mild exophthalmos.*—The patient, Miss C—s, was a girl of 17, who had marked pressure symptoms of brain tumor with choked disk of 5 diopters. She had besides weakness of both external recti, paralysis of associated ocular movement upwards, with loss of convergence in the same direction, and a drunken, ataxic gait, with incoordination of the limbs. At necropsy an extensive gliomatous tumor was found in the third ventricle, compressing both optic thalami and extending downward and bisecting the cerebral peduncles. In this case the orbit was not examined, but there was no reason to suspect metastasis.

CASE 3.—*Clinically diagnosed as tumor of the third ventricle with unilateral exophthalmos.*—The history of this patient (Miss M——z) is very similar to that of Patient 2, but unfortunately no necropsy was permitted. It was that of a girl of 27, who had choked disk of 6 diopters in the right eye and 4 in the left, with marked headache, nausea, vomiting, vertigo, temporary attacks of loss of vision, and a moderate prominence of the right eye. Examination demonstrated weakness of associated ocular movement and of convergence upwards, and irregular nystagmus when attempting to look in the same direction; distinct cerebellar gait and incoordination, more marked on the left. The symptoms were indicative of a possible tumor in the third ventricle, as they resembled very much the case cited above. It is noticeable that the exophthalmos was on the side of the greater swelling of the optic nerve.

CASE 4.—*Clinically diagnosed as tumor in the third ventricle. Bilateral exophthalmos.*—The patient, R——n, a boy of 12, had cerebrospinal purulent meningitis (?) from which he recovered. Two months afterward he began to have headache, dizziness, nausea, vomiting, dimness of vision, weakness, and a staggering gait. Examination showed paralysis of associated ocular movement upward and some impairment to the left, with disturbance of convergence in the same directions, weakness in the right face, arm and leg with Babinski reflex, and protrusion of both eyeballs, which was equally marked on both sides, and marked choked disk. Unfortunately no necropsy was obtained.

CASE 5.—*Clinically diagnosed as glioma of the pons and peduncle. Bilateral exophthalmos.*—The patient C——y was a boy of 14, who began with headache, nausea, vomiting, diplopia and difficulty in walking, which brought him to the Will's Eye Hospital, where it was found that he had a bilateral marked choked disk of 6 diopters. Examination demonstrated bulging of both eyeballs, more of the right, with paralysis of associated ocular movement and of convergence upward and to the left, which later also involved associated movements to the right. Besides, there was a distinct cerebellar gait, with weakness of the right arm and leg and peripheral weakness of the left seventh nerve. The symptoms were indicative of a gliomatouh tumor in the upper part of the pons and peduncle, principally on the left side. It was noticeable that the exophthalmos was greater on the right, although the symptoms were indicative of a greater tumor on the left.

CASE 6.—*Glioma involving the posterior part of the medulla, pons and cerebral peduncle. Unilateral exophthalmos.*—This case has already been reported.[4] The patient, R——y, was 44

* Read before the Section on Ophthalmology, College of Physicians, April, 1910.

1. Flateau, G.: Deutsch. Arch. f. klin. Med., 1903, lxxvii, 433.
2. Rosenblath: Deutsch. Ztschr. f. Nervenh., 1906, xxi, 335.
3. Weisenburg, T. H., and Guilfoyle, W. F.: Rev. Neurol. and Psychiat., June, 1910, p. 325.
4. Weisenburg, T. H.: Extensive Gliomatous Tumor Involving the Cerebellum and the Posterior Portions of the Medulla, Pons and Cerebral Peduncle and the Posterior Limb of One Internal Capsule THE JOURNAL A. M. A., Dec. 18, 1909, p. 2086.

years of age, and gradually developed general pressure and local symptoms of a right cerebellar tumor, with a choked disk of about 3 diopters. He was operated on over the right cerebellar area, but nothing was found. While before the operation there was only a partial weakness of the right third and of the sixth, some diminution of hearing in both ears and a little difficulty in articulation, after it there gradually developed a protrusion of the right eyeball and increased weakness in the distribution of the right third, and later paralysis of the right motor and sensory fifth, seventh and twelfth. Besides there was difficulty in articulation and swallowing. At necropsy, an extensive gliomatous tumor was found which involved practically all portions of the cerebellum, but especially the vermis in its inferior part and the left lateral lobe. It also extended diffusely into all the cerebellar peduncles, the posterior portions of the medulla almost as low down as the decussation, the posterior part of the pons and cerebral peduncles, and extended into the posterior portion of the left optic thalamus and internal capsule.

In this case the exophthalmos was unilateral, and on the side on which the cerebellar exploration was performed, and developed after the operation. It is to be noted that the symptoms of cranial nerve and cerebellar involvement gradually developed and became much more marked after the operation and coincidentally with the exophthalmos, and were explained by the growth of the tumor. There was no metastasis to the orbit.

CASE 7.—*Basal tumor in posterior cranial fossa. Bilateral exophthalmos.*—The patient, Miss M——s, was a young woman of 20, whom I first saw in the Will's Eye Hospital and subsequently transferred to my wards in the Philadelphia General Hospital. She had all the pressure-symptoms of brain tumor, with marked choked disk, cerebellar gait, incoordination, central weakness of the right seventh, motor fifth and tongue, weakness of all the limbs, possibly more of the right, with increased reflexes. Very early she developed exophthalmos, more marked on the left, and there was besides immobility of the left eyeball with ptosis, the only movement possible being a slight movement downward and inward. The right eye could be moved downward, but not well in an upward direction. The patient died in the service of Dr. Spiller,[5] who found a very large tumor in the posterior cranial fossa. The occipital lobes had been pushed apart and the cerebellum displaced almost to a right angle with the brain stem.

CASE 8.—*Sarcoma, compressing the temporal lobe, optic chiasm and posterior orbital bones. Unilateral exophthalmos.*—This patient, Mrs. S——a, whose case was reported a year ago by Dr. de Schweinitz before the Section on Ophthalmology, was a woman of 63, who, in 1900, injured the right orbit, but not very severely. Eight months afterward she began to have a bulging of the right eye, which from then on progressed. Dr. Wendell Reber studied her for a long time, and he states that there were never present ocular palsies. She had optic atrophy. The accessory sinuses were always normal. *X*-ray examination was negative. Eight years after the beginning of the exophthalmos, she was admitted to my wards in the Philadelphia Hospital, having then general epileptic convulsions, which were followed by temporary left hemiplegia. She never had any general symptoms of brain tumor. She died eight years after the beginning of the exophthalmos (Fig. 2).

At necropsy a tumor, a sarcoma, was found resting in the middle cranial fossa, it being about the size of a small orange. It compressed the orbital bones, the orbital surface of the temporal, the posterior part of the orbital surface of the frontal and the extreme anterior part of the cerebellar lobe. It also deviated and pressed on the optic chiasm, displacing it slightly to the opposite side, and also pressed on the foot of the cerebral peduncle (Fig. 3).

Dr. de Schweinitz, who was present at the autopsy, does not believe that the exophthalmos was the result of pressure on the cavernous sinus, although he cannot prove that it was not the result of this. He carefully dissected the specimen and there was no direct pressure on the sinus, nor was there on any of the nerves passing into the orbit. He says, however, that it is perfectly possible that the exophthalmos might have had such an origin. There was, he further states, a rather hard edema of the posterior tissues of the orbit.

In view of the autopsy, I do not know that it is possible to explain the exophthalmos in any other way than from a purely local cause, and the only local cause that can be given is pressure on the cavernous sinus, which possibility Dr. de Schweinitz himself admits. In support of this, the second, third, fourth and sixth nerves on this side were found diseased, this being especially true of the second, showing that pressure was exerted on it. Besides, the optic chiasm was compressed and deviated to the other side and the foot of the cerebral peduncle was distorted.

REMARKS

In a summary of my cases it is noticeable that in four, Cases 1, 2, 3 and 4, the diagnosis was tumor in the third ventricle, and in two, Cases 5 and 6, a glioma which involved both the pons and peduncle. In Case 7 the growth was in the posterior cranial fossa and was of such size that it compressed the occipital lobes, and twisted the cerebellum on its axis. In Case 8 there was a sarcoma in the anterior portion of the middle fossa which directly pressed on the orbit and the exophthalmos was undoubtedly the result of pressure on the cavernous sinus.

In all, the intracranial pressure was extreme, as indicated by the prominence of the headache, nausea, vomiting, vertigo and especially the choked disk. It is evident also that in the first six there was interference with the flow of the cerebrospinal fluid, inasmuch as there was either direct involvement of the third ventricle or pressure on the aqueduct of Sylvius.

The exophthalmos was bilateral in five and unilateral in three. In those in which it was unilateral either the lesion or the intracranial pressure was greater on the same side. In one, Case 3, there was supposedly a tumor in the third ventricle and the exophthalmos was present on the side of the greater swelling of the optic nerve. It is possible that protrusion of the left eyeball might have developed later. In the second, Case 6, the exophthalmos developed, after the exploratory operation, on the same side, and coincidentally with the development of other cranial symptoms. In the last, Case 8, the exophthalmos was the result of pressure of the tumor directly on the cavernous sinus.

In those in which the exophthalmos was bilateral the lesion was also bilateral and with the exception of one, Case 5, there was a greater prominence of the eyeball on the side of the greater involvement. The grade of the exophthalmos varied, it being marked in some and mild in others. In all it was progressive and came on early.

These observations agree with the collected cases quoted.

The conclusion, then, which can be drawn from the above is that exophthalmos occurs in brain tumor and especially in those cases in which there is great intracranial pressure and interference with the flow of the cerebrospinal fluid.

The question naturally arises how these factors produce exophthalmos. It is well known, especially through the physiologic studies of Leonard Hill, that the earliest manifestation of increase in intracranial pressure is engorgement of the venous circulation, this producing the familiar dilatation and tortuosity of the retinal vessels. There are, however, as has been mentioned by Cushing,[6] other external evidences equally characteristic,

5. Spiller, William G.: A Further Contribution to Palliative Operations for Brain Tumor, THE JOURNAL A. M. A., Jan. 23, 1909, p. 277.

6. Osler's Modern Medicine, viii, 431.

although less often commented on, which consist in dilatation of the vessels of the scalp and particularly the smaller venules of the eyelids.

If in addition to the above there is exerted pressure on the cavernous sinus, thrombosis of which is the common cause of exophthalmos, the explanation is not at all difficult. Such was the fact in my cases, for in all there was direct pressure on the cavernous sinus. In the first four the tumor was in the third ventricle and pressure must have been exerted on the optic chiasm and basal

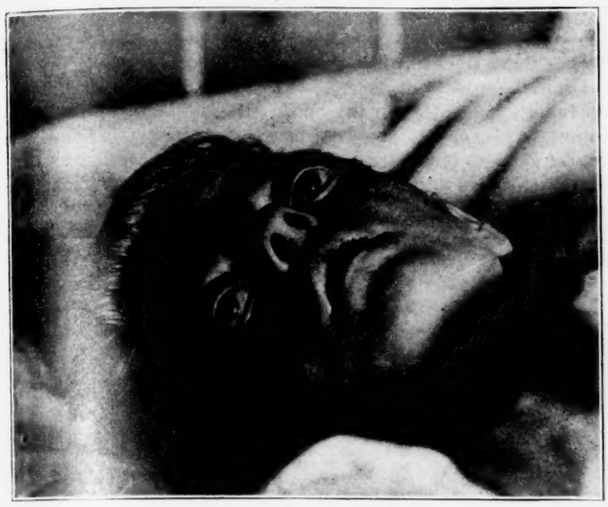


Fig. 1.—Exophthalmos in tumor of the third ventricle. Case 1.

Fig. 2.—Unilateral exophthalmos from tumor in the middle fossa. Case 8.

sinuses, while in Cases 5 and 6 there was obstruction of the cerebrospinal fluid in the aqueduct of Sylvius, this undoubtedly causing dilatation of the third ventricle. In the last two there was direct pressure on the sinus by the tumor.

Flateau advanced a very plausible theory for the occurrence of exophthalmos in those cases in which there is no direct pressure on the cavernous sinus. According to him the blood of the orbit under normal conditions is not depleted by the facial vein but by the cavernous sinus, and the outflow can be interrupted either directly by pressure on the ophthalmic vein or indirectly from a distant sinus; and tumors, for example, of the posterior cranial fossa can so obstruct the outflow of the blood in their own sinus that a portion must flow out by means of the cavernous sinus. Therefore, the back flow of the blood through the eye will be made so difficult that there will result a stasis in the orbit, this producing exophthalmos.

It is noteworthy, however, that in the material at my disposal, which consisted of the records of about 75 cases of brain tumor, exophthalmos occurred only in the cases mentioned and was readily explained by direct pressure on the cavernous sinus.

CONCLUSIONS

The conclusions which can be drawn from the study of this subject are:

1. Exophthalmos accompanies brain tumor more frequently than is generally supposed.

Fig. 3.—Tumor in middle fossa, producing unilateral exophthalmos in patient whose photograph is shown in Fig. 2.

2. It occurs only in those cases in which there is great intracranial pressure, especially when there is in addition direct interference with the normal flow of the cerebrospinal fluid.

3. Exophthalmos is produced by direct pressure on the cavernous sinus.

4. Its presence is of some clinical value inasmuch as unilateral exophthalmos is nearly always indicative of an intracranial lesion on the same side.

5. In those cases in which the protrusion is bilateral there is nearly always a greater exophthalmos on the side of the greater intracranial pressure or lesion.

2030 Chestnut Street.

Diagnosis of Extragenital Chancres.—The main point in the diagnosis of extragenital chancres is to remember that they may occur on any part of the body; if they are not thought of they will escape diagnosis. The old adage is here reversed—it is a case of out of mind, out of sight.—C. F. Marshall, in the *Practitioner.*

BRAIN TUMOR OF PSYCHOMOTOR AREA

CAUSING JACKSONIAN AND GENERALIZED CONVULSIONS, VISUAL HALLUCINATIONS, SOMATIC DELUSIONS, ASTEREOGNOSIS AND HEMIPLEGIC PARALYSIS. OPERATION. RECOVERY, MENTAL AND PHYSICAL *

FRANK WARREN LANGDON, M.D.
Professor of Psychiatry, University of Cincinnati, Medical Department
AND
SIMON PENDLETON KRAMER, M.D.
Professor of Principles of Surgery, University of Cincinnati, Medical Department
CINCINNATI

NEUROLOGIC REPORT BY DR. LANGDON

The case here reported presents no unusual features pertaining to the growth itself, its localization, the operative procedures or the recovery therefrom. In fact, it may fairly be classed as commonplace in those respects. It had been considered worthy of record, however, by reason of its peculiar symptom-complex, combining marked psychic as well as somatic disturbances; the practical absence of those important "general" symptoms; headache, vomiting, vertigo and papilledema; and the small amount of functional defect remaining at this date (March 16, 1910) four months after operation.

History.—Nov. 5, 1909, Dr. R. B. Hannah,[1] of Georgetown, Ohio, asked me to see a woman who had been developing some mental symptoms for a few weeks. It was also stated that preceding these evidences of insanity there had been some convulsive attacks, local and general. The development of the abnormal mental state, however, appeared to be the determining factor in seeking a consultation. Dr. Hannah had been in charge of the case a short time only, and at once recognized the probability of physical disease as a foundation for the nervous and mental manifestations.

The patient was a farmer's daughter, aged 39, single, intelligent and capable up to two years previous to my visit. She had for some years performed important clerical duties as a railway agent and telephone operator at a local station. The family history and surroundings were excellent and prosperous. There was a history of a blow with a croquet mallet on the left parietal region in childhood. There were no sequelæ of importance following this injury; the patient was not unconscious and not confined to the house on account of it. There was no scar at the alleged site of the blow. Two years previous to this examination there had been a "jerking" of the right hand and arm, followed in a few moments by "unconsciousness." These attacks had been repeated about twenty times in the two years just past. Following them was a progressively increasing weakness of the right hand. Two weeks previous to this examination the patient had visual hallucinations and some delusions that surgical operations had been made on her eyes and right leg.

First Examination.—This was made at the home of the patient Nov. 5, 1909. The patient was in bed. Consciousness was somewhat clouded, but the patient carried on ordinary conversation fairly well. She appeared mildly elated, or perhaps a state of euphoria would better describe the emotional state. Asked if she sees anything unusual, she answered "Yes; holes in the ceiling and walls; small ones; many of them." There was no defect in ceiling, nor was it papered. There was nothing to be mistaken for holes; in other words, this was a true hallucination, not an illusion. While the pupillary reactions were being looked for, she volunteered the information that her "eyes had been operated on recently" (probably the opthalmoscopic examination made a few days previously). Asked if anything else had been done, she replied: "Yes, my right leg was cut off recently." This was stated in quite a matter-of-fact manner, without any evidence of regret or emotion. The patient conversed rationally on many ordinary topics, but on being questioned as to any speech defect, she said she "loses a word occasionally." Speech tests showed reception and understanding good for ordinary words. Test-words and sentences were repeated correctly and without defect of articulation. Internal speech appeared good; she could describe objects, letters, words, etc., and tell their meanings. With the practically powerless right hand she could tell the shape of objects, but could not name them (astereognosis). Owing to weakness in this hand, she could not grasp a pencil.

Cranial Nerves: I, not tested; II, ordinary vision, good; no fundus changes reported by Dr. H. P. Shelton, who kindly examined the eyes a few days before my visit; III, IV, VI, no ocular palsies; pupils reacted well to light and accommodation; V, no defects noted; VII, slight weakness in lower right face group; VIII, hearing good to ordinary tests (voice and watch); IX, X, XI, no defects noted; XII, tongue movements good; no trophic changes.

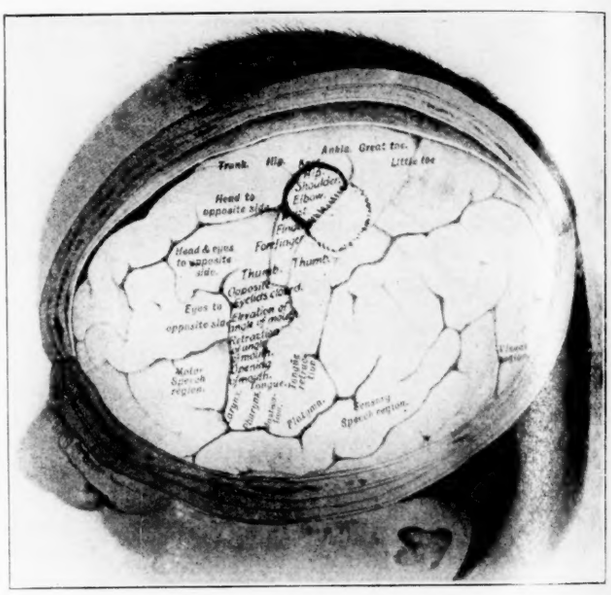


Fig. 1.—Location of brain tumor.

Trunk and Extremities: Motion: Right hand and entire arm useless, relaxed; could bend elbow and wrist and close fingers, but had no grasp; patient could not hold pencil; right leg also weak; could move joints, but could not walk; power in left arm, hand, leg and foot appeared good.

Sensation: No anesthesia to ordinary touch and pin-prick; no differences noted between the two sides of body and limbs.

Reflexes: Organic—Not defective. Tendinous—Knee-jerks diminished, but distinctly present. No difference in the two sides. No spasticity. Cutaneous—Plantar—no response, or occasionally a flexor response; no difference in the two sides.

Trophic symptoms absent; vasomotor symptoms absent.

Diagnosis.—Irritative lesion of the left psychomotor area, probably tumor; possibly a cyst or abscess.

Removal to hospital for further observation and probable operation was advised and the patient was taken to Cincinnati on Nov. 9, 1910.

Second Examination.—Nov. 10, 1910, Ophthalmoscopic examination by Drs. Robert Sattler and Victor Ray revealed no changes in the fundus. Blood examination by Dr. W. E. Schenck, on the same day, showed reds, 4,460,000; whites, 3,600; hemoglobin, 65 per cent.; color index, 0.74.

Differential count: Polymorphonuclear, 81; mononuclear (small) 10, large 5; eosinophils, 4; total, 100.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-First Annual Session, held at St. Louis, June, 1910.

1. Acknowledgments are due and hereby tendered to Dr. Hannah for kindly contributing his personal notes and observations of the patient.

Diagnosis.—Secondary anemia.

Uranalysis (by Dr. H. L. Woodward): Color, amber; reaction, acid. Albumin, trace (probably due to fecal contamination; disappeared later).

OPERATION REPORT BY DR. KRAMER

First Operation.—Nov. 13, 1909, under ether anesthesia, an opening was made in the skull over the upper half of the left Rolandic area, two inches in diameter. There was no bulging of the dura and no pulsation visible. In the center of the operative field the dura was flattened and darker in appearance. Palpation revealed the presence of a circumscribed mass, harder in consistence than the surrounding cortex. The patient was not very strong before the operation and, as a result of the cranial resection there developed considerable shock. For this reason, the scalp was sutured and the removal of the tumor was delayed for a second operation, after the method of Sir Victor Horsley. After an interval of ten days the patient improved markedly in strength and on Nov. 23, 1909, the second operation was done.

Second Operation.—On opening the dura, we found a tumor imbedded in the brain, adherent to the pia mater, involving

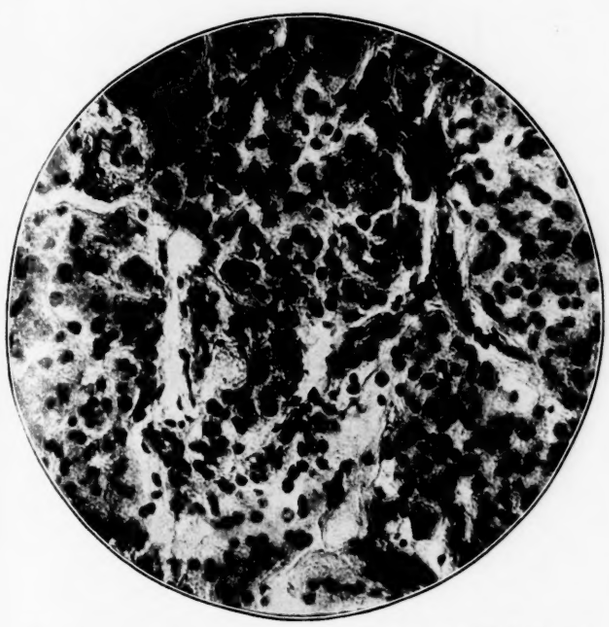


Fig. 2.—Photomicrograph of section of tumor (endothelioma).

principally the precentral convolution and the Rolandic fissure (Fig. 1).

The tumor was easily lifted from its bed in the brain, after severing a few slight adhesions to the pia mater. Hemorrhage was insignificant and there was but little shock. At the time of the second operation the brain pulsated very plainly as the result of the previous decompression. The tumor occupied the middle third of the left precentral convolution, growing downward and diagonally backward across the Rolandic fissure and displacing, but not invading, the postcentral convolution. The long axis of the tumor (55 mm.) ran across the Rolandic fissure, downward and backward.

Examination of Tumor.—The tumor was encapsulated, firm and resistant on palpation, presenting numerous small protrusions and cysts on its buried surface. It was not adherent to the dura mater. The tumor weighed 26 gm. and on section proved to be an endothelioma springing from the pia mater (Fig. 2).

The recovery from the surgical procedure was uneventful and the patient returned to her home eight days after the second operation.

Postoperative Notes (L).—Patient put to bed in good condition, conscious; improvement was steady. The hallucinations and delusions had disappeared on the second day. There was no "jerking" in the face, arm or leg. On the eighth day patient could move the paralyzed (right) leg, but could not stand alone. She could move the fingers of right hand, but had no use of it for any purpose. She was removed to her home (forty miles) on a traction car at this time. After arrival home she sat up daily in her chair. Dec. 20, 1909, twenty-seven days after final operation, she took a few steps, with assistance. Jan. 1, 1910, she walked alone across the room.

April 7, 1910, 4½ months after operation, she traveled forty miles on a traction car and called at my office for reexamination, when the following notes were made:

Height, 5 feet 1½ inches; weight, 96 pounds; no mental defect; no speech defect.

Motion: No "Jacksonian attacks," convulsions or unconscious attacks since the operation. Walks well; no defect of gait or station.

Power: Can close right hand, but cannot "register" on dynamometer (standard). Grasp in left hand registers 20 K. Moves right upper extremity freely at all joints, but has little use of hand; cannot oppose the thumb and fingers or make a "fist."

Some "silver-fork aspect" of right hand and wrist. The right shoulder droops slightly. The left sternomastoid muscle is weak, but competent in turning head.

Sensation: Good for tact, pain, heat and cold, everywhere in both hands and arms. Astereognosis *complete* of right hand, front and back, extending half way up forearm. Patient cannot recognize any difference between a pocket knife, finger, coin or wisp of cotton with hand. Half way up forearm on flexor surface she recognizes a silver half dollar as "hard and flat." Some sensory defect in sole of right foot, where cotton and a finger touch feel "the same," but recognizes a touch with a "stick" (toothpick). "Tickle sense" good in both feet.

Reflexes: Organic—No impairment. Tendinous—Knee-jerks slightly plus and equal. Ankle-clonus absent on both sides. Cutaneous—Plantar reflexes, flexor; the right less marked than the left. Oppenheim reflex absent.

Patient goes about the house and grounds daily and attends to personal needs so far as the defective right hand permits. She feels that she is gaining steadily and is cheerful and hopeful generally.

5 Garfield Place—4 West Seventh Street.

THREE CASES OF TUMOR IN THE CEREBELLO-PONTILE ANGLE *

JULIUS GRINKER, M.D.

Professor of Nervous and Mental Diseases, Chicago Postgraduate Medical School; Assistant Professor in Clinical Neurology, Northwestern University Medical School; Consulting Neurologist to the Cook County Hospital, Chicago; Consulting Neurologist to the Cook County Institutions at Dunning, Ill.

CHICAGO

Since the subject of tumor of the brain has ceased to have a mere academic interest, and has become the coveted point of attack of every progressive surgeon, reports of well-observed cases have become regular topics for discussion in neurologic and surgical gatherings. From the point of view of successful removal, next to neoplasms situated in the Rolandic area, tumors growing in the angle between cerebellum and pons offer the greatest possibilities for success, and this for two reasons: First, thanks to the labors of modern physiologists and clinicians, the localization of tumors in this region has become comparatively easy; second, the surgical technic has reached a high degree of perfection.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

When, therefore, a diagnosis can be made early and a skilled surgeon is at hand, a perfect result should be obtained in those cases in which the tumor is at all removable. Nevertheless there will always remain a large number in which removal is impossible, either because the tumor is too large, or because it belongs to the infiltrating variety.

Being of the opinion that our failures are sometimes more interesting than our successes, and also that statistics which exclude unsuccessful cases are fallacious, I am reporting three cases of tumor in the cerebello-pontile angle in which the diagnosis was correct, but which were nevertheless failures, if by success we mean with Charles K. Mills not only exact localization, but also the successful removal of a tumor, and at least partial success as regards removal of the disease.

As the entire subject of cerebellar and cerebello-pontile angle tumors has been ably reviewed by Mills, Frazier, Weisenburg and Frenkel,[1] also by Harvey Cushing,[2] and quite recently by Risien Russell,[3] I refer the reader to these authors for a complete account of the varied symptomatology of these neoplasms.

The interest in my report being centered in the cases themselves, I shall follow each case with some general remarks:

CASE 1.—*Patient.*—A. B., aged 24, single, clerk, with negative family and personal history, was first seen by me Dec. 28, 1905. His brother, a physician, who accompanied him, stated that, though physically always in good health, the patient has been considered nervous since childhood. At an early age he had suffered from night-terrors and even at the time of examination he regularly appeared dazed and confused on awaking in the morning. He was a moderate drinker and smoker and had never acquired syphilis.

Present Illness.—In August, 1905, the patient felt a weakness in the left leg and somewhat later in the left arm; the face was not involved. In the following September he began to suffer from occasional headaches of moderate severity, which were always diurnal, aggravated by physical exercise and localized in the frontal region and the nape of the neck. At about the same time transient attacks of dizziness appeared whenever he rose suddenly from the recumbent posture. Soon thereafter vision began to fail: the eyes were blurred and attacks of blindness occurred, which, on passing off, left black spots in his visual fields. Accompanying the disturbances of sight were attacks of dizziness, but never nausea or vomiting. Of irritative motor phenomena the patient described peculiar jerkings and twitchings of the chest muscles, especially marked during excitement. During the month preceding this examination he had been almost constantly tired; the slightest exertion brought on extreme fatigue and sleep was not refreshing; vision had been failing rapidly and the gait showed some staggering to the left. While these symptoms were developing two ophthalmologists were consulted. Each discovered a papilledema and suggested neurologic treatment. The next physician in attendance pronounced the case a functional neurosis. The brother, not satisfied with the diagnosis, brought the patient to my office Dec. 28, 1905, about a month after the previous consultations.

Examination.—This revealed a well-nourished young man of average weight and height, whose viscera were normal, pulse regular and 72 beats per minute. Paralysis of any kind was not apparent. Though the left half of the face seemed somewhat relaxed while at rest, yet when the patient was speaking and performing the usual motor tests nothing abnormal could be detected. The left hand-grasp was somewhat weaker than the right and the left leg showed a slight degree of weakness when made to move against resistance. The gait was somewhat uncertain and slightly ataxic, with a tendency to reel more often to the left than to the right.

Cranial Nerves: The olfactory nerves were not involved. The optic nerves showed choked disk and beginning atrophy, in consequence of which vision was markedly reduced. The pupils responded somewhat sluggishly both to light and in accommodation. Nystagmoid jerking appeared when the eyes were directed in extreme lateral positions. The third, fourth and sixth nerves were not involved. When first examined patient made no complaint of paresthesia in the region of the left trigeminus, nor was anything found objectively. Two months later, however, corneal areflexia was distinct and analgesia pronounced in the same region. With the exception of a slight degree of relaxation the left seventh nerve appeared normal. A systematic examination disclosed the existence of nerve-deafness unknown to the patient and limited to the left side. The cranial nerves from the ninth to the twelfth, inclusive, were not in the least affected.

Reflexes: All the superficial reflexes were present and of about normal intensity. The deep reflexes in upper and lower extremities were markedly exaggerated, more so on the left side; ankle clonus, Babinski, Oppenheim, or Gordon signs were not obtainable.

Coordination: Slight static and dynamic ataxia was present in the lower extremities. When each leg was tested separately the greater degree of incoordination was found in the left. The finger-to-nose test showed marked tremor in the left hand—more of an ataxic than an intention tremor. Cerebellar asynergy in trunk and lower extremities was absent, likewise Babinski's adiadokokinesia sign.

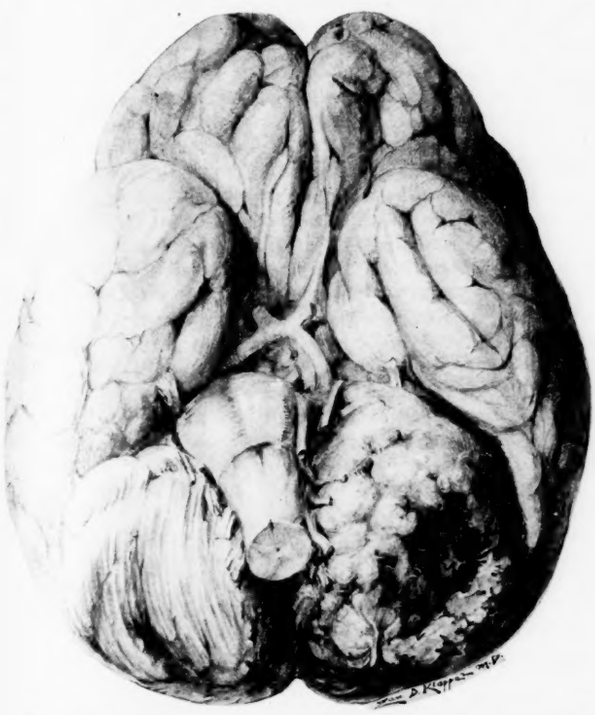
Diagnosis and Treatment.—My diagnosis was tumor in the left cerebello-pontile angle. Immediate operation was recommended with the expectation of saving what was left of patient's vision. The brother having charge of the case successively engaged three surgeons, who performed a number of operations within a period of about two months. The first surgeon trephined over the left cerebellum; but, on discovering the presence of pulsation and no tumor, he replaced the bone and closed the wound. One week later the same surgeon attempted a ventricular tapping, but found no fluid. About two weeks later another surgeon was consulted, who also trephined over the left cerebellum. After an unsuccessful search in the region of the left angle he concluded the operation by decompressing the right subtemporal area. Meanwhile the patient had become completely blind. This circumstance caused me to discourage further operative undertakings. Nevertheless, a third surgeon was found who reluctantly yielded to the brother's request to make a new hunt for the elusive tumor. Again the left cerebellum was uncovered and the left cerebello-pontile angle explored. The operation was a bloody one and lasted several hours. In spite of a profuse hemorrhage, which dictated a discontinuance of the operation, the surgeon was urged on to continue at any cost. At last his persistence was rewarded by finding a neurofibroma, which he thought probably originated in the sheath of the left acoustic nerve. Because of the patient's precarious condition it was possible only to remove a part of the tumor, namely, a piece the size of a cherry. The surgeon concluded the operation by making subtentorial decompression over the left cerebellum.

Subsequent History.—Recovery from the operation was uneventful and the patient became free from headache and dizziness, but the tumor symptoms were even more numerous and more pronounced. To mention them only, there were: adiadokokinesia, reeling gait, left-sided motor weakness, optic atrophy, left corneal areflexia, complete paralysis of the sensory trigeminus and left-sided deafness. The patient's condition remained practically the same until the middle of September, 1909, when severe headaches made their appearance. These resisted all forms of medication, and surgical treatment was again considered. Dr. Allen B. Kanavel, with whom consultation was had, favored a cautiously performed lumbar puncture rather than a ventricular tapping, being fully aware that such procedure has been condemned in tumors of the posterior fossæ. A small quantity of spinal fluid was removed, but this sufficed to give immediate relief from headache; the patient was again able to be about as before. Unfortunately this remission was of but short duration, for the end came unexpectedly on Dec. 2, 1909. While the patient was conversing over the telephone he

1. New York Med. Jour., Feb. 11, 18, and 25, 1905.
2. Cushing, Harvey: Boston Med. and Surg. Jour., clxi, No. 31, p. 71; Interstate Med. Jour., September, 1909.
3. Russell, Risien: Brit. Med. Jour., Feb. 19 and 26, and March 5, 1910.

had a peculiar seizure, in which he fell backward, striking the ground with his head and becoming unconscious. Coma supervened and he died within two hours after the fall.

Post-mortem Examination.—Owing to delay in obtaining permission, the brain could not be examined until eighteen hours after death, which, of course, was fatal to the application of the finer neuroglia stains. Macroscopically the brain presented two hernial protrusions: one situated over the right subtemporal region, probably the result of a decompression operation; the other hernia was seen over the left cerebellum, the site of several operations. In my attempt to remove the brain from the cranial cavity I ruptured a cyst containing about six ounces of fluid blood, evidently a recent hemorrhage. The cyst-wall was adherent to the petrous portion of the left temporal bone and constituted a part of the hernial protrusion over the left cerebellum. After hardening the brain in formaldehyd solution neurologic frontal sections were made. With the exception of bilateral internal hydrocephalus, more marked on the right side, nothing pathologic was discovered in the cerebrum. The hydrocephalus was probably the result of obliteration of the foramen of Magendie and of the foramina of



Enormously enlarged left half of cerebellum, pushing pons-medulla over to the right and containing large glioma.

Luschka. The conspicuous pathologic condition was in the cerebellum. The entire left hemisphere was occupied by one large mass of denser consistency, but not of different configuration from the normal cerebellum, encroaching somewhat on the structures of the right half (see illustration). A horizontal section through the entire left half of the cerebellum revealed a surface of mottled appearance, strongly suggestive of old and new hemorrhages. Microscopically the sections showed parts in which dense networks of fibrillar ground-substance were in close relation with numerous polymorphous cellular elements, varying in size from the small round cell to the long spindle-shaped cell, each containing a granular nucleus. In other parts of the sections could be seen islets of round cells of varying size with scarcely any intervening intercellular substance. In addition there were noticeable throughout the tumor mass numerous vessels of varying caliber. The mottled appearance, previously observed with the naked eye, under the microscope proved to be irregularly scattered hemorrhages of various sizes and ages. For the miscroscopic sections I am greatly indebted to Dr. C. D. Hauch, and also Prof. F. R. Zeit, in whose laboratory they were prepared.

Pathologic Diagnosis.—Because of the presence of areas resembling sarcoma, and of others corresponding to the appearances of glioma, the diagnosis presented difficulties. There are those who call such tumors gliosarcomata, while others think that this term is merely a cloak for our ignorance. It cannot be denied that rarely both epiblastic and mesoblastic formations may occur in the same tumor, but I incline to the view that most of those reported as gliosarcomata have been either gliomata or sarcomata. It is generally believed that glioma in its varied metamorphosis is capable of producing pictures like sarcoma. The preponderating appearance of my specimen was like that found in glioma; besides, the growth did not overstep physiologic and anatomical boundaries. My diagnosis was glioma cerebelli. In the discussion which ensued on my presentation of the brain with microscopic sections in the joint meeting of the Chicago Pathological and the Chicago Neurological Society, this diagnosis received substantial support.

COMMENT

It is interesting to note that in this, as in many another neurologic case, the ophthalmologists were the first to call attention to the brain as the probable seat of the lesion in a supposed affection of the eye; further, that neurasthenic symptoms had at one period so overtopped the underlying basic trouble that an experienced physician had made the diagnosis of neurasthenia four weeks prior to my seeing the patient, at a time when tumor symptoms must have been present. Another point worth noting is the unusual beginning of the trouble with weakness in the left leg and arm, a weakness which corresponded to the asthenia of Luciani, and was not the result of a motor paralysis, there having been neither disability nor spasticity and pathologic reflexes. The case began, then, with asthenia confined to the left side, without any known cranial nerve disturbances—unless nerve-deafness had existed for some time, of which the patient had no knowledge. Then followed headache, dizziness, and visual disturbances, all general symptoms of brain tumor. Later still came cerebellar incoordination and only after several operations had been performed was trigeminus anesthesia noted.

A retrospect of the surgery in this case brings out the following important points:

1. The presence of pulsation does not necessarily mean an absence of tumor underneath.

2. Once a tumor patient has become blind and his other symptoms, such as severe headache, vomiting and vertigo, are not troublesome, a radical operation may possibly verify a doubtful diagnosis, but is of no service to the patient.

3. A knowledge of the previous point should lead to the performance of "decompression" before blindness has occurred.

4. The much-dreaded lumbar puncture in tumors of the posterior fossæ may occasionally prove beneficial in the hands of those who exercise due care in preventing a sudden escape of the spinal fluid. In this case the removal of only about an ounce of cerebrospinal fluid was sufficient to relieve a headache which resisted all other treatment.

In respect to the discrepancies existing between the ante-mortem pathology, which showed a neurofibroma, and the post-mortem findings, which revealed a glioma, two possibilities must be considered. Either the glioma, which, it will be recalled, contained areas resembling sarcoma, developed since the operation and grew into a previously existing sarcoma—the latter a malignant transformation of remaining fibroma tissue—or else the portion of tumor removed at operation was not a fibroma. Not having seen the first specimen, but hav-

ing carefully examined the post-mortem sections, I incline to the view that the tumor was a glioma from the beginning.

Equally uncertain is the exact origin of the hemorrhagic cyst. It is quite possible that the fall which occurred when the patient was standing at the telephone was entirely accidental and the cause of the large hemorrhage which produced death by suddenly compressing the medulla. It is more probable, however, that the large hemorrhage was spontaneous and orginated in the same way as did the other numerous large and small hemorrhages, which were not sufficiently extensive to press on the pons-medulla and thereby to cause death. Neither the macroscopic nor the microscopic examination, however, threw any light on this question.

As for the internal hydrocephalus, its occurrence has been frequently noted in tumors of the cerebellum and the cerebello-pontile angle, and has been attributed either to agglutination of the foramina connecting the fourth ventricle with the subarachnoid lymph-spaces, or else to the compression by the tumor of the veins of Galen, preventing drainage of the interior.

CASE 2.—*Patient.*—Miss A. C., aged 26, bookkeeper, consulted Dr. R. C. Pattillo in the spring of 1905 for an affection of the eyes. He discovered a refractive error requiring correction with lenses. These having been prescribed, the patient was placed in the care of Dr. Frederick Menge for the treatment of peculiar sensory troubles in the face, presumably caused by antrum disease. Repeated examinations by Dr. Menge failed to disclose the existence of either antrum or sinus disease. The patient was returned to Dr. Pattillo, who made several ophthalmoscopic examinations, and, finding the optic disks normal and no other ophthalmic lesion, concluded that the case required neurologic treatment. Through his courtesy I saw the patient for the first time in July, 1905, and obtained the following history:

History.—The family record, though not of the best, was free from nervous and mental disease, nor could I discover a history of tuberculosis or neoplasm. The patient, never very robust, had always been well until added responsibilities had of late caused a "nervous breakdown." She stated that within the past three months she had developed attacks of sudden blindness, which were momentary in duration and most often occurred when she was recumbent. Though these symptoms at first alarmed her, she continued at work until more troublesome visual disturbances appeared in the form of mists or clouds rising before her eyes, which temporarily obscured her vision while at her books. After a series of these attacks she was obliged to take a few days' rest, but she regularly returned to her work thereafter. A complaint to which she paid little heed, but which had persisted several months before the eye symptoms became prominent, was a peculiar heaviness and pressure feeling, with an occasional sharp pain in the left cheek, often radiating into the left eye. Not infrequently she experienced sensations of "grittiness" in both eyes, followed as a rule by an irresistible desire to sleep. While eliciting this history I discovered marked deafness in the patient's left ear, which, she explained, had come on gradually after more or less constant ringing had persisted in that ear for several months. And finally she laid particular stress on the existence of a feeling of fatigue, especially on rising in the morning, complained of general nervousness and dull headaches, and also of occasional numbness in the finger tips.

Examination.—The patient, an intelligent young woman, of about 26, appearing rather nervous and somewhat depressed, recited her story in great detail and gave it the coloring of the hysterical. A physical examination disclosed normal viscera. Motor paralysis was nowhere discernible, nor could twitching of muscles be seen anywhere. Gait and station were normal. The sensory examination revealed slight hypesthesia over the entire left half of body, including the face. Superficial and deep reflexes were all normal, with the sole exception of some reduction of the conjunctival and corneal reflexes on the left side. The pupils responded well to light and in accommodation. The optic disks were neither congested nor pale; in fact, they appeared typically normal. Hearing was completely abolished in the left and normal in the right ear. Additional findings were: A point of tenderness over the vertex, several such points over the spine and a hypersensitive spot in the left ovarian region. As the symptoms, both positive and negative, were those frequently encountered in functional nervous disease, and as none of the objective signs appeared to me definitely characteristic of organic disease, I diagnosed hysteria and treated the patient accordingly. She visited me several times, seemingly improved at first, but not so during the last two or three visits.

Subsequent History.—In the middle of September, 1905—six weeks after my first examination—the patient entered my office staggering and in a state of alarm. With great consternation she related to me that, as she was crossing the street, she became dizzy, staggered, and everything appeared black to her. It was marvellous, she said, that she escaped being killed, having become blind while crossing the busy thoroughfare. Her sight had gradually returned, but she feared a recurrence of the attack. She also informed me that two days previously she had suffered intense headache, had developed dizziness and had vomited several times. Never before had the last-mentioned symptoms been in evidence. Her gait had become ataxic—a reeling from side to side. The ophthalmoscopic examination revealed to me, for the first time in this case, extreme bilateral choking of the disk.

Diagnosis.—The advent of such symptoms compelled a revision of the diagnosis. Everything suddenly appeared clear to me: The deafness, having come without antecedent local cause and having been preceded for months by tinnitus aurium, could now be readily explained by pressure on the acusticus. And similarly, the paresthetic disorder in the left half of the face, which had given rise to the suspicion of antrum disease, could easily be ascribed to pressure on the trigeminus. The frequent and peculiar visual disturbances, in spite of the presence of normal disks in the early history of the case, could be accounted for by transient attacks of edema. Of course, with the appearance of headache, vomiting and vertigo, added to the cerebellar gait, in a patient who had had acusticus and trigeminus involvement, the diagnosis of tumor in the cerebello-pontile angle on the side of the cranial nerve lesions became almost a certainty.

With this diagnosis and the advice to operate immediately, the patient was returned to her family physician. Two weeks later a two-step operation was performed over the cerebellum, during the progress of which the diagnosis was verified, but the patient died. Consent was not obtained for a post-mortem examination.

COMMENT

In this, as in the preceding case, eye symptoms were among the earliest to attract attention. Paresthesia in the left trigeminus, though antedating the visual disturbances by several months, failed to impress the patient with its seriousness. Likewise, a deafness which was complete—discovered during a routine examination—barely received mention on the part of the patient. To her the visual and neurasthenoid symptoms were of far greater importance, and by manner and statement she succeeded in impressing her physician with a similar belief. This may perhaps explain why manifestations which were unmistakable local signs of tumor in the cerebello-pontile angle, did not receive due consideration until the general symptoms of brain tumor appeared. Further, this case helps to support the following conclusions:

1. Unilateral sensory disturbances, be they ever so slight, should arouse a suspicion of organic disease, because these are not invariably the result of functional neurosis.

2. The focal signs of neoplasm of the brain, and particularly of that growing in the cerebello-pontile recess,

often precede the general symptoms by a considerable period of time.

3. Choked disk may occur late, but rapidly, in tumors of the posterior fossæ.

CASE 3.—*Patient.*—C. T., a woman, aged 55, entered Cook County Hospital on Nov. 26, 1909, in the service of Dr. G. W. Hall, by whose courtesy I am reporting this case. A few days after her admission I made an examination and learned that the patient, whose family and personal history were negative, had been well until about six months previous. At that time she developed dull headaches, which came at irregular intervals, each attack usually lasting several hours. Their localization was principally over the right fronto-parietal region and occasionally over the occiput. Soon after this symptom there appeared more or less constant dizziness, which was always aggravated by the upright posture and by sudden rising from recumbency. Following this, came ataxia of a type which caused the patient, unless supported, to reel and fall mostly to the right, but occasionally to the left and forward. The aforementioned symptoms were rapidly succeeded by attacks of nausea and projectile vomiting having no relation whatever to the ingestion of food. From the beginning of her illness vision had been gradually failing, but she could still read newspapers six weeks before admission; from that time on her sight had deteriorated rapidly, so that at this examination she could only count fingers. An additional complaint was, that six months previously she had developed what was considered a "stroke" on the right side, which left some weakness on the same side.

Examination.—The patient, a well-nourished woman of about 55 years, walked slowly, with short steps, her gait presenting a good example of the intoxicated, but not that of one suffering from past or present motor paralysis. The facial musculature appeared somewhat relaxed on the right side, although on inspection no definite paralysis was detectable. On the application of the usual tests I discovered no noticeable inequality in wrinkling the forehead, but winking was less frequent on the right than on the left side; further, in the voluntary attempt to raise the upper lip, the right half was somewhat retarded, and puckering of the lips as well as whistling seemed impossible. The tongue, when protruded, deviated markedly to the right and the mucous membrane of the right half was thrown into folds, giving the typical appearance of lingual hemiatrophy. With the exception of distinct paralysis of the right external rectus, the ocular muscles showed no anomalies beyond a slight nystagmus, slow in character and most marked when patient looked to the extreme right. The pupils were dilated and responded but faintly to light and accommodation. Vision was reduced to finger-counting. Involvement of the trigeminus was manifest by the presence of hypesthesia and hypalgesia in its entire distribution, including cornea, conjunctiva, nasal and oral mucous membranes. Hearing was entirely abolished in the right and slightly below normal in the left ear. At this point it is well to state that about twelve weeks before entrance an incision in the right external auditory meatus had been made, which resulted in a chronic purulent discharge from that ear. The reason for such treatment was not ascertainable.

Reflexes: The corneal and conjunctival reflexes were absent on the right, present on the left side. Epigastric and abdominal reflexes were not elicitable on either side. Masseter, supinator, biceps, triceps, knee and Achilles tendon reflexes were present bilaterally and were of normal intensity.

Sensation: This was nowhere impaired, except in the right trigeminus distribution.

Coordination: There was undoubted incoordination of both station and locomotion of the variety described as cerebellar: a tendency to fall sidewise when standing or walking, which was not aggravated by closure of the eyes. The cerebellar symptom described by Babinski under the term adiadokokinesia was present and well-marked; the patient was unable alternately to pronate and supinate the right forearm, but could accomplish these movements readily with the left.

The viscera were all normal; likewise the blood and urine, which were frequently examined. A Wassermann test, kindly made for us by Dr. Frederick Harris, proved negative.

Diagnosis.—This was easy in the presence of the many general and local symptoms of brain pressure as found in our case. In addition to the general symptoms of brain tumor, such as headache, nausea and vomiting, bilateral choked disk, there was nystagmus and cerebellar ataxia, which latter symptoms enabled localization in or about the cerebellum. Further, the implication of the trigeminus, sixth, seventh, eighth and of the twelfth nerves on the right side, was sufficient to localize the neoplasm more definitely. When I presented the patient in my Cook County Hospital clinic, I made the diagnosis of rapidly growing tumor in the right cerebello-pontile angle, and suggested immediate operation.

Operation.—Dr. Schroeder, of the Cook County Hospital staff, performed the operation on Dec. 17, 1909. A large tumor mass was discovered in the right cerebello-pontile recess, which he considered irremovable. He contented himself with making cerebellar decompression and then closed the wound.

The patient made a good recovery from the operation, but died a few days later—December 27—from the effects of facial erysipelas. Post-mortem examination was refused.

COMMENT

There could have been no difficulties in the diagnosis of a case so rich in classical symptomatology as this one. Only the unusual features therefore will be touched on.

The headache, it will be recalled, was principally in the fronto-parietal region and only occasionally in the occiput, its usual place of election. Had there been no other symptoms, this might have caused confusion in the mind of the examiner and would have created a doubt as to location. It must be recollected, however, that the situation of a headache has but limited localizing value and that in many cases of cerebellar tumor the headache has been entirely frontal.

A symptom which still constitutes a topic of lively debate among neurologists is the muscular weakness occurring in cerebellar and cerebello-pontile angle tumors, some maintaining that it is a real motor paralysis and the result of motor tract involvement, others assigning to it a purely cerebellar cause and explaining it as a sign of cerebellar asthenia. To the latter group of men belongs Luciani, who described three symptoms as characteristic of a cerebellar lesion produced experimentally, namely, atonia, asthenia and abasia. Clinicians have found this triad of symptoms in disease of the cerebellum, and particularly in tumor of that region.

In my last case a diagnosis of cerebral hemiplegia had actually been made because of a rather sudden appearance of right-sided weakness combined with facial involvement. Had the type of facial paresis been investigated, it would have been found to belong to the peripheral-nerve variety, the upper branch being implicated. The absence of pathologic reflexes in the extremities presumably paralyzed, and the uncrossed character of the asthenia—being homolateral with the several cranial-nerve lesions—negatived the diagnosis of hemiplegia and favored that of cerebellar asthenia on the same side as the tumor.

100 State Street.

Multiple Exostoses.—A boy aged 4, when 18 months old, developed symptoms which were attributed to left hip-disease. He was treated with a Thomas' hip-splint for two and a half years. He was then brought to the hospital with a supposed fracture of the forearm. The deformity and limitation of movement at the elbow were found to be due to an exostosis growing from the radius. The patient had numerous exostoses growing from scapula, ribs and ends of long bones.—Harold Burrows, *Proc. Roy. Soc. Med.*, July, 1910.

THE TOPOGRAPHIC DIAGNOSIS OF SUBTENTORIAL BRAIN TUMORS *

HERMAN H. HOPPE, A.M., M.D.

Professor of Neurology, Medical Department University of Cincinnati; Neurologist to Cincinnati Hospital

CINCINNATI

TOPOGRAPHIC DIAGNOSIS

The question as to whether or not we shall operate for tumors in this region, and if we operate, whether the operation shall be radical or palliative, can be decided only by an accurate topographic diagnosis. The subject of differential topographic diagnosis is therefore of prime importance. Surgical intervention is dangerous, or not, in the cerebellar region in direct ratio to the amount of exploration, handling and bruising to which the cerebellum is subjected. Moreover, if we know, from the location of the growth, that the chief disturbance produced is by an internal hydrocephalus, as in Case 1, the nature of the surgical interference will be

Fig. 1. Case 2.—The photograph illustrates paralysis of right external rectus, right facial, and left sided hemiataxia.

different from that which is indicated if the growth itself, by local pressure, is threatening the life of the patient. More accurate topographic diagnosis will not only enable us to be more precise in advocating or refusing to advise surgical intervention, but it will enable us to say whether the suboccipital or subtemporal region is to be the seat of the operation, and, if suboccipital, which side.

Have we signs sufficiently positive to enable us to say that a growth is in the brain-stem, in the cerebello-pontine angle or intracerebellar, and if the latter, on which side it is located?

The cerebral surgical triumphs of the last decade have been achieved in relieving cysts and tumors of the cerebellum itself, and those of the cerebello-pontine angle. The diagnosis of the latter growth, as we shall see, is comparatively easy. It is the chief object of this paper to analyze the signs and symptoms which indicate a lesion of the cerebellum itself. I shall assume that such a localization can be arrived at only by exclusion, and I shall therefore briefly state the history of cases, in which there were illustrative lesions, which must be excluded in the topographic diagnosis of intracerebellar growths.

Fig. 2. Case 3.—Typical tumor of the left acoustic nerve in the left cerebello-pontine angle.

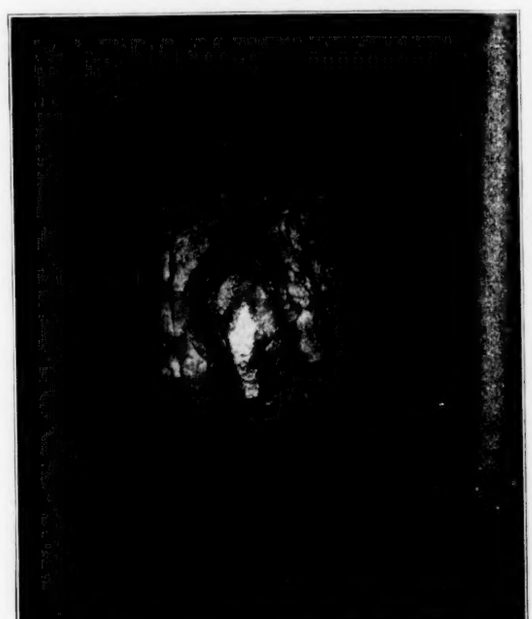


Fig. 3. Case 6.—Tumor of the right frontal lobe simulating a cerebellar symptom-complex.

TUMORS OF CORPORA QUADRIGEMINA

The first case to which I shall call attention is typical of tumors of the region of the corpora quadrigemina. I shall give but a brief outline of the history, because the case itself will form the basis of a future paper.

We have here a typical case which illustrates the syndrome of tumors of the corpora quadrigemina: Paralysis

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

* For reasons of space, part of this article is omitted from THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints.

of the external eye-muscles, involvement of both eyes, inability to turn eyeballs upward, ability to turn them down, pupillary paralysis, ptosis of both lids, blindness, incoordination of gait, some staggering static ataxia; no loss of sensation or of motor power in the extremities. The only discordant note is that deafness is often associated with lesion of the corpora quadrigemina, but in our case hearing remained normal. The other unusual feature is the extreme ataxia which came on toward the end. Patient when in bed used arms and legs freely but was unable to stand at all on account of the ataxia, and showed marked retropulsion on attempting to walk. Intention tremor, athetosis and nystagmus were absent in this case. The autopsy showed that the tumor was practically limited to the corpora-quadrigeminus region.

TUMORS OF PONS

Tumors of the pons offer quite a different syndrome from that of the tumors of the region of the corpora quadrigemina as the following case will illustrate:

CASE 2.—*Patient.*—C. W., aged 12, school-girl. Family history was negative. There was no tuberculosis in the immediate family. Patient was well up to four months ago. Onset of trouble was marked by a slight defect in the right eye; patient saw double; at times had some fever; headache occasionally at first; later, more frequent, and just previous to the time she was first seen had attacks of vertigo, and staggered; had vomited every morning. No defect of hearing.

Examination.—At the time of examination the mental condition was normal; pupils equal and responded to light; optic disks normal; there was paralysis of both internal and both external recti muscles; the eyes could be moved upward and downward; paralysis of the right facial, both upper and lower branches; right eye could not be closed. The tongue deviated to left; arms were normal in all respects; in the right leg the patellar reflex was practically abolished; left patellar reflex exaggerated; left ankle-clonus, bilateral Babinski sign; no weakness in legs; hearing normal; when eyes were closed patient walked with a staggering gait, with a tendency to turn toward the left. There was no static ataxia, no ataxia in recumbent position.

Course of Disease.—Two weeks later the condition remained the same, but a horizontal nystagmus had been developed, on looking to right. After four weeks there developed an ataxia of both arms, without any loss of muscular power; with blindfolded eyes patient could not walk forward at all, but invariably was forced toward the left. She staggered to left when walking, and fell to left in Romberg test. Hearing had become defective in the right ear, both to bone and air conduction. Papillæ remained normal; left eye movement upward somewhat diminished; left patellar reflex had returned and both were now exaggerated.

May 24, 1910, mental condition was good; optic discs normal; eye muscles as before; paresis of soft palate; patient choked on swallowing. Right side of face remained unchanged; no loss of sensation anywhere; no areflexia cornea. Speech was difficult; dysarthria was present; patient developed some weakness, but a very acute ataxia of the left side, both arm and leg; adiadokokinesia of the left arm was marked; patient was unable to walk without assistance on account of the left-sided ataxia. Ankle-clonus was present on the left side; exaggerated patellar reflexes.

This case presented the typical history of an infiltrating tumor of the pons. The damage wrought is caused by a gradual destruction of the various nuclei and structures of the pons, partly by invasion, partly by compression.

The symptoms are chiefly bilateral; viz., bilateral involvement of the eyes, bilateral ataxia of the arms, bilateral increase of the patellar reflexes, but the involvement of the seventh and eighth on the right side, paresis of the left leg with ankle-clonus on the left side and ataxia of left arm and leg later on, shows the typical condition of pontine and medullary growths, viz., paralysis alternans.

TUMORS OF CEREBELLO-PONTINE ANGLE

And now let me call attention to tumors of the cerebello-pontine angle. The typical tumor here is of very slow growth, usually a fibroma or endothelioma, growing from the trunk of the auditory nerve; but the seventh and fifth may also be the seat of origin. The typical early syndrome is that of defective hearing on one side, gradually increasing, with occasional attacks of vertigo, with loud noises and ringing in the ear; then the general symptoms of headache, vomiting, vertigo, unsteady gait, plus more or less pronounced involvement of the fifth, sixth, seventh and eighth cranial nerves, on one side, with perhaps an indication of ataxia of arm or leg on the same side, and finally, signs and symptoms which point to a compression of the medulla and pons. This syndrome is so typical that in the majority of cases the localizing diagnosis is easy. Let me here introduce a typical case:

CASE 3.—*Patient.*—R. M. R., aged 49, examined July 9, 1908. Father of four children; superintendent of Normal school, state of Kentucky; patient of O. L. Smith, Lexington, Ky. He had had meningitis (?) when 9 years old; no venereal diseases; influenza yearly for five or six years; had been partially deaf in the left ear for the previous six years. Dr. Smith wrote that in March, 1907, patient had "some contraction of the field of vision, occasional sinistral hemianopia, dextral arm and leg numbness, and inability to nominate with his usual facility." Patient stated that for the previous year he had had occasional attacks of vertigo and could not see out of the temporal half of the left eye; that he could not hear well with his left ear. He staggered at times, but to no special side; lost confidence when he attempted walking in the dark.

Examination.—Mental condition, memory and speech normal; left pupil somewhat larger than the right; both responded to light and accommodation; no choked disk; some weakness of internal rectus of right eye and external rectus of left; horizontal oscillations of eyeballs when turned to extreme left, but no typical nystagmus. The patient could not hear well in left ear, but bone conduction was normal. Sensation in the facial region was normal; reflexes of cornea normal. No loss of function in regions supplied by the other cranial nerves. Sensation, muscular power and reflexes of the extremities normal; no ataxia in upper or lower extremities.

Diagnosis.—No positive diagnosis could be made; neoplasm suspected.

During his vacation patient noticed that his gait was slightly ataxic. In October and November, 1908, he suddenly fell on two occasions. His legs simply gave way under him; was able to arise unassisted and go on with his work.

Feb. 10, 1909, patient stated that he had some headache and vertigo in the fall of 1908; that he was unsteady on his feet and staggered occasionally as if drunk. Six weeks prior to above date he had a sudden onset of violent headaches and vomiting. This continued since; patient was confined to bed and treated for uremia.

Examination.—Patient had not been able to walk without support, and when put on his feet staggered and fell to the left. He was very weak; pulse 96; vomited constantly, and had violent headaches. Pupils reacted to light. Patient had very marked choked disks, but could see well; stated that vision in left eye became blurred occasionally; weakness of internal rectus of right eye and external rectus of left eye; horizontal wavering of eyeballs when turned to the left. (Nystagmus?). He showed a tendency to lie on left side; gait weak and staggering, and fell to the right; no typical cerebellar gait. Nasolabial fold seemed less marked on right side than on the left. No ataxia of the arm; right arm normal in muscular power; the right leg was perhaps a little weaker than the left; urinalysis negative.

Course of Disease.—For two weeks patient stopped vomiting; then vomited occasionally. Seemed much improved on treatment of iodid of potassium. No new symptoms or signs developed for six weeks.

April 5, 1909: Rapid increase, rather suddenly, of weakness in the legs; when put on feet, fell to the right and dragged the right leg. Reflexes of legs exaggerated; had suddenly developed bilateral ankle-clonus and slight patellar clonus; plantar reflex normal on both sides; no disturbance of sensation, no ataxia in the recumbent position, no weakness of arms; other signs and symptoms remained as before, except pulse, which was very weak; 120 per minute.

Diagnosis.—Cerebellar tumor, probably on the left side. Dr. Ransohoff was called in to operate. Dr. Zenner also saw the case.

Operation.—On account of the weakness of the patient, it was decided to do a typical subtemporal decompression on the right side, rather than take the increased risk of perhaps a bilateral suboccipital operation. The bulging of the dura was enormous; dura opened and pulsation in brain reestablished; patient left operating room barely alive, on account of cardiac weakness. Twenty-four hours after operation patient suddenly developed a typical tachycardia; pulse 240 beats per minute at heart; irregular, no radial pulse. This condition yielded to stimulation and subcutaneous infusions of salt solution, pulse returning to 108. The bilateral ankle-clonus disappeared, headache and vomiting ceased, and patient became comfortable.

Subsequent Course.—On third day paralysis of the pharynx was noticed, and up to his death patient was unable to swallow. On the fifth day patient had a convulsion, suddenly lost consciousness, became rigid all over, head thrown back in opisthotonus, radial pulse lost, tachycardia again persistent, respiration suspended; marked asphyxia. Patient recovered consciousness and seemed fairly well with the exception of the paralysis of the pharynx. In twenty-four hours he had a second attack of convulsions; this was followed by tachycardia and quick, shallow respiration. There was a ptosis of the right eyelid, loss of corneal reflex, corneal ulceration on the left eye; no loss of sensation in the left side of face. There was paralysis of the right arm and right leg, and perhaps of the left leg; death.

Autopsy.—This was made three hours after death. The cerebrum was dry and apparently completely drained of cerebrospinal fluid. There was more fluid below the tentorium cerebelli. On removing the tentorium, a tumor, the size of an English walnut, was found partly attached to the petrous portion of the temporal bone, loosely adherent, but apparently growing from the left acoustic nerve. It seemed so soft as to give the impression of being a cyst. The fifth nerve was stretched over the middle of the tumor, anteriorly. The entire cerebellum and brain stem seemed displaced, more especially the left lobe of the cerebellum, which was displaced downward and backward. The lower left half of the pons and adjacent portion of the medulla were markedly compressed (Fig. 2).

The case also illustrates the difficulties in localizing even such a typical tumor as neoplasms of the acoustic nerve in the cerebello-pontine angle. Theoretically, this should be easy, but Bruns, Cushing and others have called attention to the absence of signs, and in this case up to within a few days of the operation there were practically no symptoms and signs which indicated with any degree of certainty that the growth was in the cerebello-pontine angle. I believe in our case the extreme softness, almost fluid consistency of the growth during life (although it became quite solid in formaldehyd solution), accounts for the absence of symptoms of pressure; the nerve trunks, being more firm than the tumor itself, were not compressed. Even the fifth nerve, which was stretched and flattened out over the tumor, showed no signs of loss of function, except twenty-four hours before death.

In this case we have typical history of a gradual diminution of hearing in left ear (side of lesion) beginning six years before the tumor caused general symptoms. Horizontal oscillations (jerking) of the eyeballs when turned toward side of lesion. No areflexia cornea at any period before the operation except a few days before death, although the autopsy showed that the fifth nerve was flattened into a ribbon over the tumor. There was no change in sensation, muscular power and reflexes in either upper or lower extremities. There was no choked disk until two months before the operation. In a word for six years after beginning deafness was noticed, no signs or symptoms of tumor of the cerebello-pontine angle were present. A few months before the operation, however, all general and focal signs rapidly set in. Then we have attacks, not continuous, of staggering gait; two attacks of astasia-abasia; inability to walk on account of static ataxia. Patient falls to the left; has no objective loss of power in arms or legs; perhaps a slight weakness of right leg; no ataxia of either arm; nystagmic jerking; weakness of internal rectus of right eye and external rectus of the left. Gait is not typically cerebellar; later on, weakness of right leg develops; bilateral ankle clonus; no ataxia in either upper or lower extremities when in recumbent position; no disturbance of sensation.

BASILAR MENINGITIS SIMULATING TUMOR

In this connection it is appropriate to note another case* which I believe to be a case of basilar syphilitic meningitis, although there is no autopsy report to confirm the diagnosis. Both Weisenberg and Mills have placed similar cases on record. Oppenheim in a recent case report warns us not to place too much importance on a positive Wassermann reaction or on temporary success of the antisyphilitic treatment, in a similar case.

This case was one of a typical syndrome of tumor of the cerebello-pontine angle: General symptoms of brain tumor plus one-sided involvement of the fifth, sixth, seventh and eighth nerves, with ataxia of one extremity on the same side.

The facts, however, that the patient had had a paraplegia six years before which disappeared completely under potassium iodid, and that she died suddenly with all the signs of an acute bulbar palsy, led me to believe that the case was one of basilar syphilitic meningitis. I did not recommend an operation, but placed her on gray oil injections, too late, however, to accomplish any results. This case only strengthens the rule that a careful history and a consideration of the symptoms in the chronologic order of their occurrence is necessary to make the differential diagnosis.

EARLY DIAGNOSIS

I cannot lay too much stress on the early diagnosis of tumors of the cerebello-pontine angle. They are very amenable to surgical treatment, as the numerous cases on record testify; but when the case has advanced to the point of compression of the pons, as in my case, little is to be hoped for from surgical interference. The aurist should be the first to recognize these cases, because of the early involvement of hearing, and should be on the lookout for the early symptoms, viz., progressive loss of hearing with middle ear normal, vestibular attacks of vertigo, slight weakness of face and areflexia cornea on the same side, with perhaps weakness of external rectus of same eye. No other focal lesion, with the possible exception of basilar syphilis, produces this syndrome.

* The details of the history are given in the Transactions and in the author's reprints.

After the consideration of these cases we may say that tumors of the cerebello-pontine angle show a predominance of unilateral focal signs on part of the fifth, sixth, seventh and eighth, whereas tumors of the pons and medulla show bilateral focal signs with a clear indication of hemiplegia alternate. In both, the focal signs may precede the general signs of brain tumor, and frequently do. Pons and medulla tumors, being small, produce less marked general signs of brain tumor, whereas, the angle tumors have later on marked general signs. Choked disk is characterized by its absence in pons tumors, although this is not invariably the rule, whereas, the cerebello-pontine angle tumors manifest general signs. Choked disk is almost invariably present, together with headache, vomiting and vertigo, partly due to an associated internal hydrocephalus.

DIAGNOSIS OF CYSTS AND TUMORS OF CEREBELLUM

And now let us proceed to the consideration of that part of our subject which to my mind has the greatest practical importance, namely, the early diagnosis of cysts and tumors of the cerebellum itself. When these tumors and cysts have grown to such a size as to compress the cranial nerves and the pons itself, the diagnosis is not difficult, but the surgical prognosis is bad; whereas, the outlook is good if an early localizing diagnosis can be made before the tumor has grown beyond the confines of the cerebellum. This early diagnosis is very difficult. Not only is it difficult to say whether the growth is located on one side or the other, in the hemisphere, but it is often difficult to rule out the growths of the frontal lobe or to say with certainty whether the symptom complex is caused by a tumor, by acquired internal hydrocephalus, or whether we are dealing with the so-called pseudo-tumor symptom-complex.

CEREBELLAR CASES

Let me briefly introduce two cases here which will illustrate the difficulty of making an early exact localizing diagnosis in cerebellar cases:

CASE 5.—*Patient.*—J. P. C., Nashville, Tenn., a man aged 47, single; occupation, sheet-writer. Parents both dead; cause unknown. The patient had never had syphilis or a chancre; had been a drinking man for past ten years, but had never been sick. Onset of present illness eight months previous to examination. The chief symptom was a constant headache, usually occipital, but at times frontal. These headaches were very severe in character, and the periods of freedom were few and short in duration. Any physical strain, and also coughing, made the headache worse. When the headaches were bad the patient was confined to bed, but when he attempted to walk he staggered and showed a tendency to fall to the right.

Examination.—May 30, 1909. The pupils were equal in size, and responded to light. The eyeballs were prominent; external muscles of eyes normal; papillæ normal; corneal reflexes normal; hearing normal in both ears. Left nasolabial fold not so prominent as the right; no defect of function in regions supplied by any other cranial nerve. Muscular power, sensation and reflexes of both upper and lower extremities were normal. There was some static ataxia; marked ataxic gait; patient staggering toward the right.

In the course of the following six weeks there were no new developments, except that the headache and vomiting became worse, to the extent that they were very severe and almost constant. The gait became so ataxic that patient was not able to walk or stand without support. No choked disk developed.

Diagnosis.—Cerebellar tumor, probably of the right side.

Operation.—A suboccipital decompression on the right side was decided on, and the operation was performed by Dr. Horace Whitacre. No tumor was found. The cerebello-pontine angle was explored. The intracranial pressure was very great. About one-third of the right lobe of the cerebellum was removed.

Result.—The immediate result of the operation was a complete relief from headache and vomiting. There was some ataxia of the right hand after the operation. After two weeks the patient was able to sit up, and gradually began to walk. His gait, however, was decidedly ataxic. During the four weeks at the hospital, following the operation, he suffered but one headache. Five months after the operation his condition is fair, but he does not walk much better and has occasional attacks of headache.

CASE 6.—*Patient.*—M. M., a woman aged 36, was referred to me by Dr. F. Forchheimer on June 14, 1909. Patient was ill when an infant, but has since been in good health. Had influenza and whooping-cough four years ago. Had influenza nine weeks ago; since then constant headaches; partly frontal, partly occipital, the pain radiating into the shoulders. Had vomiting spells almost daily since the headache became constant. Had vertigo when the head was moved from side to side, or when asked to walk. Vision gradually failed, until patient was unable to read ordinary print.

Examination.—June 14, 1909. Facial expression one of great suffering; slight drooping of left eyelid; bilateral papill-edema discovered by Dr. Walter Forchheimer one week ago; no loss of corneal reflexes; slight static ataxia when standing on right foot. The examination was otherwise negative.

During the next five weeks the condition gradually grew worse. Patient had repeated attacks of cerebellar spasms, during which there would be a momentary loss of consciousness, with general muscular rigidity. She also lost the patellar reflexes in both sides, and occasionally had double vision. There was no loss of muscular power in the legs, but the ataxia became so marked that patient refused to walk, but was able to walk with assistance. The vision rapidly grew worse, and a suboccipital decompression was resolved on, the left side being chosen as the probable seat of the tumor, on account of the drooping of the left eyelid and a tendency to stagger toward the left.

Operation.—The operation was performed by Dr. Horace Whitacre. A cyst, about the size of an English walnut, was found at the seat of the operation. It was subcortical, involving the posterior portion of the cerebellum, and on opening it a pale amber-colored fluid was discharged, followed by a collapse of the lobe of the cerebellum. Recovery from shock and anesthesia was rapid.

Results.—Headache and vomiting ceased for a while, and the vision improved greatly, but the other signs remained unchanged. The choked disk continued, the double vision likewise. The patellar reflexes did not return. A sinus established itself automatically, and cerebrospinal fluid escaped in large quantities. After two weeks the headache and somnolence returned. There was an occasional attack of vomiting. There developed an acute ataxia of the left arm and leg, which rendered the patient unable to walk at all. There was also a marked weakness of the left arm. Incontinence of urine and feces developed, and there was a return of the cerebellar seizures. At this time I went away on my summer vacation and left the case in charge of Drs. Whitacre and Langdon. An attempt was made to relieve the patient by draining the lateral ventricles, but the patient died within twenty-four hours after the operation.

TOPOGRAPHIC DIAGNOSIS OF CEREBELLAR TUMORS

The chief interest in the study of the differential topographic diagnosis of tumors below the tentorium cerebelli is whether we have arrived at that state of diagnostic acumen which will enable us to say with any degree of certainty whether a growth is located in the cerebellum itself, and above all, which lobe of the cerebellum is involved. I believe that we can say with some accuracy whether a growth is in the pons, or the region of the corpora quadrigemina, and I believe that the diagnosis of growths in the cerebro-pontine angle can be made with almost equal facility; but the great stumbling-block is offered by tumors of the cerebellum

itself. We have seen what signs and symptoms are peculiar to neoplasms of the pons, of the region of the corpora quadrigemina and of the cerebello-pontine angle.

In arriving at a diagnosis of tumors of the cerebellar hemisphere our first step is one of exclusion; we must exclude tumors in the above locations. Then we must exclude frontal lobe tumors. We cannot here go into the symptomatology of frontal lobe tumors, but suffice it to say that there are well known physiologic facts and clinical and surgical experiences which attest the fact that at times it is practically impossible to say whether the tumor is in the frontal lobe or in the cerebellum.

The physiologic fact to which I refer is that the loss or disturbance of function of one cerebellar hemisphere when removed in animal experiments, especially the ataxia, quickly disappears after the operation, but if the animal is then deprived of the opposite frontal lobe, all the cerebellar symptoms return. In a word, the frontal lobe in a measure takes up, or at least compensates for the loss of the function of the crossed cerebellar hemisphere. This interaction of function takes place through the fronto-bridge-cerebellar tract. It is also a well-known fact, that tumors of the frontal lobe, both by causing ataxia, and by producing distance pressure signs, can cause a symptom-complex, which at times can hardly be distinguished from a cerebellar symptom-complex. Moreover, it is not unusual to have unilateral spasms and even Jacksonian seizures in cerebellar lesions, as the cases of Mills and Weisenberg and Case 4 of this paper show, which complicates the matter still more.

FRONTAL TUMORS

Following is a short history of a case of left frontal tumor:

CASE 7.—*Patient.*—G. von L., aged 41, was admitted to Cincinnati Hospital Aug. 5, 1901, in a maniacal state, complaining of pain in the left occipital region. He denied venereal diseases and alcoholism. The patient was unable to give a history of his case. According to the wife's statement, he had failed in business six months previously; much worried. For the past six months she noticed a mental deterioration; he did not seem bright; was forgetful. For previous two months he had complained much of pain in the left occipital region. Six weeks before admission, while beating a carpet, patient suddenly staggered backward, was supported to a chair, stared at his wife, was unable to speak, became blue in the face, but did not lose consciousness. At the same time he had a spasm in the right leg, but none in the right arm. The patient said that he felt as if he were going up to the ceiling. He had about ten such attacks that night, three or four the next day and then they became less frequent and finally stopped. This was followed by formication and numbness of right foot. Later he had an attack of paralysis of the right side, which soon passed away and patient returned to his business. There was no headache or vertigo during this period. At times the patient would stagger and show a tendency to fall to the right side, and could not walk without support for the past few days. After a severe attack of pain in the left occipital region a few days before admission, patient had numbness and weakness of the right leg. He began to vomit and had attacks of vertigo. At night he became delirious and in a few days became maniacal and was brought to the hospital.

Examination.—Mental condition was bad; could be aroused from stupor, but was unable to give an account of himself; did not seem to understand the questions put to him; did not speak voluntarily; when asked a question, repeated it slowly, but gave no answer. Paresis of left facial was present; paresis of left side of tongue doubtful; patient was unable to state whether right hand was weak or not on account of mental condition; right leg was dragged when patient attempted to walk. Patient fell to right side. There was no ankle-clonus; no Babinski in right side. On ophthalmoscopic examination double choked disk was observed, with hemorrhagic retinitis; right pupil larger than the left; left pupil did not respond to light; right one responded. Slight ptosis of right eyelid; paresis of external rectus of both eyes.

Operation.—An unsuccessful operation was done over left cerebellar hemisphere. Patient died within thirty-six hours.

Autopsy.—Autopsy revealed a tumor the size of a hen's egg, which grew from the dura on the lower surface of the frontal lobe up into the frontal lobe. It was not infiltrating, and the frontal lobe surrounded the tumor like a shell.

This patient was operated on for a cerebellar growth chiefly owing to the fact that there was a hemiplegia alternans, involvement of the external recti of both sides and history of a staggering gait with tendency to fall to one side.

Only recently an autopsy was made in a similar case in which one feature of the clinical history was that the patient at times had a staggering gait. Dercum recently reported a similar case, in which the operation was made over the cerebellum and the autopsy revealed frontal tumor. We are gradually, however, improving our knowledge of frontal growths, as well as of those of the cerebellum. I believe that we shall make fewer mistakes along these lines if we pay greater attention to the chronologic order of the development of signs and symptoms, and I believe that in frontal growths some change in the mental state will occur, and will often even antedate the general symptoms of brain tumor, whereas, mental symptoms if they occur at all, occur late in cerebellar tumors. In at least two cases of frontal tumors in my observation the mental deterioration was manifest, the above history showing that the patient at times even became maniacal, and was brought into the hospital in this condition. In the other case, which I refer to above, aside from a progressive loss of vision and the ataxia, there were no mental symptoms, except a remarkable euphoria, a cheerfulness which continued to death, lasting over four years, which is certainly unusual in brain tumor cases of other location.

Only recently Reich has shown that we may even have areflexia cornea, which is looked on as a positive diagnostic sign of tumors of the cerebello-pontine angle, in frontal tumors. This, however, is so rare that it need not complicate the diagnosis.

PSEUDOTUMORS OF THE BRAIN

In making the diagnosis of cerebellar growths, we must also rule out pseudotumors of the brain, a subject which has been placed on record by Nonne, Oppenheim, myself and others. This pseudotumor symptom-complex is more apt to resemble the cerebellar symptom-complex than any other. Its pathology is unknown. The autopsy in one of my cases was entirely negative, so far as the brain was concerned. Here is a summary of the typical syndrome: headache, violent vertigo, vomiting, bilateral choked disk, paresis of the external recti muscles of the eyes, areflexia cornea, especially of the right eye; tinnitus, with diminished hearing on the same side, cerebellar ataxia and deflection of head and even entire body to one side. These signs of pseudotumor are in a manner similar to acquired internal hydrocephalus or serous meningitis. These two conditions must be ruled out, and the only means at our command are the presence of other signs and symptoms, on which I shall presently lay stress, which are present in cerebellar cases, and absent in the above symptom-complexes.

PHYSIOLOGY OF THE CEREBELLUM

A few words on the physiology of the cerebellum will be in place here. The chief function of the cerebellum as ascertained by animal experimentation, is that of automatic coordination. Through the medium of the cerebellar tract, Gowers' tract, the posterior column cerebellar tract, and the vestibular nerve, all of which Bruce holds end in the cortex of the vermiform lobe, the cerebellum obtains knowledge of the state of contraction, and the tone of all muscles of the body and the position of the body. When these tracts are interfered with within the cerebellum we have the chief symptom of cerebellar disease, viz., cerebellar ataxia. Lesions of the cerebellum, however, are not the only factor in the production of cerebellar ataxia. We know that tracts lead from the cerebellum to the pons through the corpora quadrigemina and to the opposite cerebral hemisphere, and that the destruction of any one of these tracts will cause cerebellar ataxia. Hence, lesions of the frontal lobe, of the corpora quadrigemina and of the pons may cause cerebellar ataxia. In the lesions of the cerebellum, however, we have ataxia without any associated signs, such as will form part of the syndrome in lesions of the frontal lobe of the corpora quadrigemina and of the pons. In considering cerebellar ataxia and other signs of cerebellar lesions we must not forget, that the loss of function of one cerebellar hemisphere, as Munk and others have shown, may be compensated by the opposite frontal lobe, and that symptoms may disappear; or that disease of one hemisphere may even run a latent course. Babinski lays much stress on a physiologic phenomenon which Munk attributes to the cerebellum, viz., a harmonious interaction between the movements of the extremities and those of the trunk. Babinski calls this function *synergie* and the loss of it *asynergie cerebelleuse*. By this is meant a loss of harmony, which shows itself when walking, for instance, by an attempt to bring the leg forward, while the trunk does not change its position or may even go backward. This symptom was typically illustrated by the tendency to retropulsion on attempting to walk in Case 1, or by the inability in Case 2, of the patient to walk forward when the eyes were closed. *Asynergie cerebelleuse* may be confined to one side—hemiasynergy—as in Case 6; and Babinski says that it points to a lesion of the cerebellar hemisphere on that side or to one of the tracts leading to the hemisphere, or from the hemisphere on that side. Oppenheim seems to agree to this; Spiller dissents. Forced movements are seen in animals, rolling movements, but Munk does not attribute them to lesions of the cerebellum, but to other causes. In the human being we see a tendency to assume certain positions in bed, or to hold the head to one side, the diagnostic value of which we will consider later.

Astasia-abasia, hemiataxic movements, homolateral weakness of muscles, homolateral convulsions, will be considered as localizing signs later on, as will also speech disturbances and nystagmus, all of which have been attributed to loss of function of the cerebellum.

FOCAL SIGNS

What are the focal signs which clinical experience has taught us as pointing to tumors of the cerebellum? The following syndrome calls for analysis:

1. Cerebellar ataxia.
2. Atactic movements, hemiataxia, *asynergie cerebelleuse*, hemiasynergy and tremor.
3. Vertigo.
4. Nystagmic jerking and other eye-muscle signs.
5. Atonic paresis of trunk and extremity muscles on one side.
6. Adiadokokinesia and speech disturbances.
7. Convulsions, unilateral or bilateral.
8. Attitude of the head.

Let us take up the signs and symptoms in the order as they are given:

Cerebellar Ataxia.—The typical, reeling staggering gait is probably seen only in tumors of the vermiform lobe. Perhaps also in quadrigemina tumors (Case 1), but here it will be associated with extensive eye-palsies, which will be absent in the cerebellar lesion.

What is more commonly seen is staggering to one side and a tendency to fall to one side. I believe that when unassociated with pontine signs or symptoms, this may be looked on as fairly characteristic of lesions of the cerebellar hemisphere. It would be of great value, if it could be established as a law, that the patient reels or falls to the side of the lesion. Weisenburg seems to think that this is the case. Two of my patients showed a tendency to fall toward the side of the lesion; one did not. Oppenheim and Siemerling and Spiller hold that we cannot rely on this sign as pointing to the side of the lesion. Siemerling says that cerebellar ataxia may be entirely absent. If the vermis is the seat of the growth, the ataxia may be so great that the patient is unable to stand at all. This is true likewise of growths of the corpora quadrigemina, as Case 1 shows; but in advanced cases, as Nos. 3, 5 and 6 show, may be present in pressure in or on the lateral lobes, or in tumors of the brain stem. But this may be explained by distal or contiguous pressure on the vermiform lobe or cerebellar tracts, in all three of these cases.

Hemiataxia and Hemiasynergy.—These, which Oppenheim thinks may be identical manifestations of cerebellar incoordination, are often present, and may, after further investigation, be found to be of great topographic diagnostic importance as pointing to lesions in the same side of the cerebellum.

Bruns says that hemiataxia is a valuable sign, because it occurs early, and is a sign of an intracerebellar lesion. In the four cases reported by him it occurred in the homolateral arm in each case.

Soques reports hemiasynergy and adiadokokinesia on the same side, homolateral, in a case of tumor of the cerebello-pontine angle.

In Case 3, presumably a pons tumor, very marked hemiataxia, perhaps hemiasynergy, and certainly adiadokokinesia, developed four or five months after the onset of the first symptoms.

The homolateral ataxia which was seen in Case 5 after the operation, is in effect a physiologic observation. No tumor having been found, a large portion of the cerebellar hemisphere was removed, and the homolateral ataxia was noticed after a few days.

In Case 6 there was static ataxia of the right leg (side of cyst), before the operation, loss of patellar reflexes and atony of both legs, but no loss of muscular power. The ataxia became so marked that patient refused to attempt to walk. After the operation the ataxia of the left arm and leg became very acute. In a word, the cyst was found on the left side, and the ataxia was most marked on the left side, the right arm and leg being free. When ataxia is suspected but not present in the ordinary way of standing or walking, Oppenheim recommends that the patient be placed in the ordinary Romberg position, and be asked to bend forward with closed eyes. As a rule, not only will the

loss of equilibrium show itself, but also the side toward which the patient sways, will show itself. Some stress has been laid on unilateral tremor of multiple sclerosis, as a sign of cerebellar disease. Collins, Bruns, Siemerling and Oppenheim have called attention to this sign, and when present, it is usually homolateral.

Atonic Paresis.—Atony of the trunk muscles on side of the lesion, homolateral weakness in the atactic limb and loss of patellar reflexes on one side or both, may occur, as seen in Case 6. Bruns says that it occurs only in acute cases after removal of a part of the cerebellum. Siemerling says that it is still a debatable sign. A sudden and acute onset of astasia-abasia, disappearing just as suddenly, was seen in Case 3.

Vertigo.—This, which is invariably present in subtentorial growths, is not of much localizing value. The exact differentiation between vertigo of intra- and extracerebellar origin, as defined by Stewart and Holmes, has not been verified by others and needs further investigation, namely, that in intracerebellar tumors the objects and the apparent movements of their own bodies are from the side of the lesion to the opposite side, and in extracerebellar tumors the apparent movement is toward the side of the lesion. If, however, vertigo is brought about by changing the position of the body or of the head, we may safely say that this occurs when the body or the head is turned away from the side of the lesion.

Nystagmus.—Not the typical nystagmus seen in multiple sclerosis, but a nystagmic jerking, when the eyes are turned to one side or the other, is frequently seen in subtentorial growths. Munk says that strabismus and nystagmus are not seen in animals as a result of the removal of one-half of the cerebellum, but as a result of injuries to the neighboring parts. Siemerling, although admitting it as a sign of intracerebellar lesion, thinks that it is caused by pressure on the pons or corpora quadrigemina. H. Neuman and Collins look on it as a cerebellar sign. Nystagmic jerking is usually seen when the eyes are turned toward the side of the lesion, but this is not the invariable rule. It was present toward the side of lesion in Case 3. It was not present in Case 5 either before or after the operation; nor was it present in Case 6.

Spiller, in a case of cerebellar abscess, says that the nystagmus became more marked when the patient looked toward the seat of the lesion. H. Neuman has conformed this in a later communication.

Siemerling does not feel that the direction of the nystagmus has a positive localizing value, while Oppenheim thinks that nystagmus may be a sign of intracerebellar disease, although it more frequently is the result of distal pressure. I have never seen general ataxia of the eyeballs such as Spiller and Weisenburg describe in a subtentorial tumor, but have seen it in a case of nuclear degeneration of the centers in a case of chronic bulbar palsy.

Attitude.—In this respect, I wish to call attention to the fact that the position of the head and the position of the body have a marked influence on bringing out signs of cerebellar tumors that may be latent. In Case 3 nystagmus occurred only when the eyes were turned toward the seat of the lesion. Oppenheim in a recent article gives his experiences on this subject. He cites two cases of tumor of the cerebellum in which a nystagmus was only slightly indicated when the patients, in a standing position, looked to one side or the other, but which become very marked even when the eyes were at rest, if the patients reclined on one side. In another case in which nystagmus was absent when standing or lying on the back, if the patient lay on his right side and looked toward the left, nystagmus appeared at once, and a paresis of the external rectus became apparent. In another case, nystagmus on looking toward the side of the lesion appeared only after the patient had been turned on a revolving chair, two or three times. In two other cases of subtentorial tumors, areflexia cornea was produced by having the patient lie on the side opposite to the tumor.

Convulsions.—General convulsions or unilateral convulsions, of the cerebellar type, viz., opisthotonos, momentary loss of consciousness with a general clonic spasm of very short duration, are indicative of subtentorial pressure and irritation of the pons, rather than of intracerebellar tumor. They were seen in Case 6 (cyst of hemisphere), as well as in Case 3 (tumor of cerebello-pontine angle). Probably one of the most valuable signs which will indicate the side of the lesion is one to which Babinski has called attention, namely:

Adiadokokinesia.—By this is meant a slowing of movements of an alternating character, and is best illustrated by successive pronation and supination of hand and forearm. In lesions of the cerebellar hemispheres there is a marked diminution in the rapidity with which these movements can be alternated, and occurs always on the homolateral side. Oppenheim and Collins and Siemerling lay much stress on this sign, and especially Siemerling, who says that he always found it after his attention was called to it.

Adiadokokinesia, according to Boenhoeffer, who describes speech disturbance in a case of cerebellar tumor, manifests itself as bradyphasia; he says that it is due to an inability of the patient to rearrange his lip and tongue muscles rapidly, which is necessary for fluent speech. Other speech disturbances have been ascribed to cerebellar lesions, as a staccato, jerky mode of talking, which has been attributed to incoordination or ataxia of the muscles of tongue, lip and larynx. Speech becomes slow, repetition of long words causes a chopped-off reproduction, and at times stumbling and stammering. Rapid speech is impossible, but there is no anarthria. The attitude of the head may give us some indication as to the side of the lesion. Baten called attention to the fact that the head is inclined in such a way that the occiput points to the side of the tumor, and the chin is pointed away from that side. Collins, in a case of hemorrhage, describes just the opposite condition. Oppenheim says that there is no rule, but that the patient assumes such a position of the head and body as cause him least inconvenience. Spiller also thinks that there is no rule. In my cases I could not confirm the rule. Sholz has used the Neisser puncture test to determine the side of lesion, and located the tumor in two out of three cases by this means. Oppenheim calls attention to a difference in the percussion note on the two sides, and says that we may find more dulness on the side of the lesion. Bruns calls attention, especially in children, to tenderness on percussion, and the cracked-pot sign, on the side of the lesion.

19 West Seventh Street.

BIBLIOGRAHPY

Reich: Berl. klin. Wchnschr., 1908, No. 9, p. 476.
Nonne: Deutsch. Ztschr. f. Nervenh., xxv.i, 169.
Oppenheim: Lehrbuch der Nervenkrankheiten, 1908.
Hoppe: Jour. Nerv. and Ment. Dis., February, 1907.
Munk: Die Functionen von Hirn und Rückenmark, Berlin, 1909.
Babinski: Rev. Neurol., 1899.

Welsenburg: Diagnosis of Tumors and Other Lesions in the Cerebello-Pontile Angle, THE JOURNAL A. M. A., April 18, 1908, p. 1251.
Oppenheim: Neurol, Centralbl., 1910, Nos. 3 and 7.
Bruns: Gehirngeschwülste.
Siemerling: Berl. klin. Wchnschr., 1908, Nos. 13 and 14.
Collins: Med. Rec., lxxiii, 763.
Babinski: Rev. Neurol., 1902, No. 21.
Neuman: Arch. f. Ohrenh., lxvii, 191.
Spiller: In Posey and Spiller's The Eye and the Nervous System.
Boenhoeffer: Monatschr. f. Psychiat., xxiv, 379.
Bruns: Neurol. Centralbl., 1904, p. 578.
Soques: Paris Neurolog. Soc. Report, 1909.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. HOPPE, LANGDON AND KRAMER, AND GRINKER

DR. C. H. HUGHES, St. Louis: Papers of this character are always exceedingly interesting from the light they give us on the subject of diagnosis. Symptomatically in all we have choked disk and titubating, unstable gait. No paper has yet been given presenting a case so markedly unilateral as to give us that characteristic symptom in the gait, of a disposition to describe a semicircle in the walking of the patient.

The subject of brain tumors becomes especially interesting for the purpose of diagnosis, particularly focal diagnosis, as they impinge on the origin or a course of certain cranial nerves. Tumors of the posterior portion of the brain and cerebellum often result in loss of vision which is quite characteristic, but the tumor in the white matter of the brain causes choked disk only from the general involvement of the brain, and its congestive condition apparently, so far as my observation has gone.

When as a surgeon, I was called to preside over a hospital for the insane, I used to think that it was the province of a surgeon to operate in every case when opportunity offered, especially for epilepsy and tumors. But I am not so hasty now in operative suggestion. I recall an instance of unilateral involvement of the cerebellum accompanied by the characteristic tendency to describe a circle on the opposite side of the lesion in attempting to walk; I was agreeably surprised in that case, after the use of extensive doses of cathartics and sodium bromid, etc., to see that symptom disappear. Notwithstanding, the man died and I made the autopsy which McLean Hamilton reproduced in his classical work on that subject at the time. We have not all the light that is coming to us yet on the subject of tumors, but we are getting more light than we had some years ago.

DR. G. W. HALL, Chicago: In one case that Dr. Grinker reports, the patient, who came on my service at the Cook County Hospital, showed the typical findings of the process in the right cerebello-pontile angle, and the question at that time so far as the diagnosis was concerned was whether or not there was an abscess or tumor. As Dr. Grinker brought out in the history of the case, it was at first very puzzling, because the patient had also a discharging ear; but the fact that the ear had been punctured by a physician, on the outside, at a more recent date than the onset of the symptoms, easily cleared up the history, sufficiently to guarantee the advisability of an operation.

In connection with that case I might mention also the conditions which Dr. Hoppe brought out as to frontal tumors. No one can make an absolutely accurate diagnosis as to localization of tumors of the brain perhaps outside of the cerebello-pontile angle. We have seen instances occur in which diagnosis of cerebellar processes have been made, and the processes were found in the frontal lobe or in the brain proper.

Dr. Hoppe's statement as to the mental symptoms occurring in the frontal tumors rather than in the cerebellar tumors seems to be a point well taken. That was especially dwelt on by Dr. Beevor in one case he had on his service in the hospital at Queen's Square, London, in which he made the probable diagnosis of a frontal tumor rather than a tumor of the cerebellar process because of certain mental symptoms present in that case.

DR. CHARLES L. DANA, New York: A few years ago the subject of brain tumors had become interesting, because the success of surgical intervention was so poor, but in the last four years we have been much more successful in localizing and removing tumors, especially subtentorial tumors. In historical justice to American neurologists, Dr. Grinker ought to state that the attention to the clinical facts regarding tumors of the cerebello-pontile angle, was first brought out by Dr. Hunt and Dr. Franckel about four years ago in a series of papers and reports which they made at that time; it antedated any emphatic recognition of these tumors by any foreign or American neurologist or surgeon that I know of. At that time they reported several cases and three operations, all unsuccessful; but they then drew attention to the fact of the ease with which such tumors can as a rule, be recognized. One point which they made was that in some of these patients there was a neurofibromatosis of the skin, so that in some cases the possibility of a tumor of the cerebello-pontile angle was suggested by the fact that a great many little fibromas of the skin had been noticed in the patient.

There is a symptom in cerebellar disease sometimes seen in tumors, hemorrhages and softening and atrophic conditions, that is, a certain tendency to catatonia.

The cerebellar seizures that have been referred to vary somewhat in character, but are most frequently, I think, either sudden plunges forward or sudden droppings down by the patient as though he had been struck by lightning, or suddenly fainted; at other times the patients fall down and assume the sprawling attitude and tonic spasms such as are seen in animals experimentally operated on. These cerebellar seizures generally come from lesions that begin from an extramedullary source—tumors of the pontile angle or of meningeal origin.

DR. THEODORE DILLER, Pittsburg: Those who attended the Section last year at Atlantic City will remember a patient that I showed before the Section at that time, from whom a cerebellar tumor had been removed. This patient suffered from very severe headaches, showed a high grade of optic neuritis, 6 or 7 D., and had a posture of the head to the left, away from the tumor. The tumor was removed from the anterior margin of the cerebellum after about one-third of the cerebellar lobe had been removed. I saw this patient about a month ago; he is working on a farm. His gait, which was extremely uncertain, is good. He is entirely free from pain. He says that he sees well, and is comfortable in every way, and the only thing that we can discover wrong with him is a moderate grade of optic atrophy. This case is now of about eighteen months' standing.

I commend very much Dr. Hoppe's method of presenting his case here today by the pictures. It is difficult to transport specimens to a meeting; but stereopticon views like these give as plain a perspective view of the tumor as the actual specimen would.

With regard to this point of the confusion between frontal and cerebellar lesions, let me say that recently I saw a patient whose history was that he had fallen, and that an operation had been done in the frontal region, and a small amount of pus removed a year ago. When I saw this patient he was having a great deal of pain in the occipital region; he was complaining of very severe pain confined to the frontal region and his head was extended backward very far. He had no fever; and he had not the slightest pain in the frontal region. We hurried him off to the hospital. An operation was done over the frontal region and an abscess was found immediately below the site of the old wound, and I think fully an ounce of pus came out. The case is very striking. The only thing the man complained of was very severe pain in the occipital region (not localized as to the side—probably bilateral), and this was due to an abscess in the frontal lobe.

DR. D'ORSAY HECHT, Chicago: The interest taken in cerebellar neoplasms and the discussions arising therefrom, have resulted in a gratifying percentage of accurate localizations in operations in this region. This is particularly true of cases with acusticus symptoms. As soon as a suspected tumor presents in a marked degree eighth nerve involvement, the tendency is to designate it as a cerebello-pontile angle tumor. I should like to get some expression from the members with regard to the propriety of calling tumors, necessarily wide-spread in their extent over the cerebellum or in the cerebello-pontile space, angle tumors. We are in truth not dealing with an angle, so far as the invasion by tumor of this area is concerned. We are

rather dealing with a quadrilateral space, something that has more of the configuration of a rectangle. I feel, therefore, that if we get away from the designation of angles in these cases we may be serving cranial topography with more accuracy, so far as this site of predilection for certain tumors is concerned.

In Dr. Grinker's paper, I think that, aside from the complete report of his cases, chief interest centers in the character of his summary, in which he dwells upon the question of glioma and sarcoma, as well as the expediency of lumbar puncture. I think that we as neurologists are quite agreed that lumbar puncture of itself is a relatively innocuous adjunct to our diagnostic technic, but it may prove a decidedly dangerous measure in the presence of a brain tumor. Perhaps this particular fact is not sufficiently impressed on internists or general practitioners. I have not infrequently heard physicians who busy themselves more or less with the modern routine in neurologic examination, ask whether a lumbar puncture has been made, forgetting, I think, that lumbar puncture may be of real danger to the patient when we are dealing with obvious symptoms of intracranial pressure of tumor origin. I should advise extreme conservatism in doing lumbar puncture in this type of case.

I think, too, that in those cases in which cerebral tumor of solid formation is suspected, we are not infrequently surprised to find a cyst, capable of evacuation, and therefore yielding a better prognosis than was admissible from the premises prior to operation. I recall such an experience five or six months ago, when it was my privilege to see a case of brain tumor at the request of Dr. Alfred Murray. I made a localization of cerebellar tumor and the patient was operated on by Dr. Albert E. Halstead, of Chicago. The acusticus findings were of very material value in referring the tumor to the cerebello-pontile space (or angle, if you wish) and on a very extensive decompression, exposing both sides of the cerebellum very widely and spaciously, it was found that the suspected area was filled with a fairly large cyst, which was properly evacuated, and at a recent date, the patient was doing very well in his own home, and able to be up and about, for a time even following his occupation as a pharmacist.

I agree with Dr. Dana that we should not forsake the old and well-tried clinical criteria in arriving at a localization, but, on the other hand, I feel that we should put due emphasis on some of the newer additions to our technic and credit with importance such a symptom as, for instance, has been advanced by the French school, and called "adiadokokinesia." I have noted it in several instances, and I think, as an evidence of asynergy, it is quite as important as are other symptoms entering into the question of the coordinating function, as it depends upon the cerebellum.

DR. JULIUS GRINKER, Chicago: I wish to emphasize a point of general practical interest, namely, that hysteria and neurasthenia are diagnosed often in cases requiring more extended investigation. I recall several such cases of my own, in which the symptoms at first pointed to functional disease, but brain symptoms developed later and the diagnosis of organic disease had to be made.

One point which has not received due emphasis in this discussion is that cerebello-pontile angle tumor may begin with hemiplegic symptoms. My third case, which for lack of time could not be reported in full, was diagnosed as hemiplegia at a time when there were hemiplegic manifestations in the form of one-sided asthenia, that is, a unilateral weakness resulting from cerebellar atonia. In these cases there is neither exaggeration of reflexes, nor Babinski sign.

I am very thankful to Dr. Dana for correcting my short reference to the historical development of this subject. It is quite true that Drs. Hunt and Franckel were the first to call attention to tumors in the cerebello-pontile angle; they also furnished splendid contributions to the symptomatology.

In my opinion the new cerebellar sign described by Babinski under the term "adiadokokinesia" is not valueless. When present, it is a reliable sign. It is more often absent than present and frequently it only appears after an operation has been performed on the cerebellum, certainly too late to be of value in diagnosis. In one of my cases this symptom was present before any of the others. While, then, this sign may not be of the greatest value, we may nevertheless consider it, if only the observation may serve to determine its proper place in the symptomatology of cerebellar tumor.

Staggering to one side is not a reliable focal sign. In two of my cases the staggering was on the side of the tumor; in the third case the patient staggered to either side.

Concerning speech disturbance, my first case showed an utterance which might be called "jerky" speech, rather than bradyphasia. The so-called "cracked-pot" resonance I have not found in my cases, but I have often observed it in the hydrocephalus of children.

EHRLICH'S BIOCHEMICAL THEORY, ITS CONCEPTION AND APPLICATION *

LOUIS HART MARKS, M.D.
Fellow of the Royal Institute for Experimental Therapeutics
FRANKFORT A. M., GERMANY

It is my privilege in this paper to take up the subject of specific chemical therapeutics, which is equivalent to saying that I am to expound the work that Professor Paul Ehrlich has accomplished in the past seven years, during which time he has done far more than merely lay the foundation of this new science. It can be said that this basic idea, which he has followed logically from the very beginning of his experimental work, down through his present world-stirring discovery; namely, that a specific chemical affinity exists between specific living cells and specific chemical substances, is his main, most valuable, broadest and most suggestive contribution to science.

It was this idea that was at the foundation of his famous studies on the morphology of the cellular constitution of the blood. As is known, Ehrlich was the first to describe correctly the leukocytes, and to teach us to differentiate not only different parts of the body of the leukocyte from one another, but also the different kinds of leukocytes one from the other, by showing that these different parts stain differently with the same dyestuffs.

Following up this work in the field of morphology he studied vital staining and demonstrated even more clearly the selective action of many different substances for different tissues of the body. The best-known experiment in this connection is the one performed with methylene blue, whereby he showed that if the substance be injected directly into the circulation, on section of the animal some time later, the tissues of the nervous system will be the only ones colored blue. He found further that those cells of the body which demand the most oxygen would not be colored at all, but would turn blue after an exposure to the air. This led to the publication of a work[1] which stands out as a beacon light in the realm of science, and is surpassed only by his original publication of his fundamental theory concerning the distribution and selective action of chemicals in the human body.

Further following out his idea he happened to feed mice with ricin and abrin, the vegetable poisons contained in the castor oil and jequirity beans, and found that he could immunize them against these poisons. Not only was this the first time that animals were highly immunized to vegetable poisons, but it was also the first time that the degree of immunity was definitely known. He also discovered the coagulative action of ricin on the red blood-corpuscles and found

* Delivered by invitation before the Anglo-American Medical Association of Berlin, Sept. 10, 1910.

1. The Oxygen Requirements of the Organism.

that he could prevent this by adding to a mixture of ricin and red blood-corpuscles a small quantity of the blood-serum of a previously immunized animal.

As the opportunity was given to Ehrlich to follow out on a large scale researches that he had long hoped to be enabled to carry on, and to which he was much more forcibly attracted, he left the other fields of research to undertake the study of specific chemical therapeutics.

Ehrlich believed (and this belief found sufficient support in his twenty-five years of experience) that for each specific parasite a specific curative drug must and could be found.

An important question to be solved in starting this work was the selection of a suitable parasite and a suitable animal for experimentation.

Because of the sleeping-sickness epidemic in Africa, and because the trypanosome is easily transferable to mice, Ehrlich began working with trypanosomes. At first he used many dyestuffs, some entirely new, some old. He soon succeeded, in connection with Weinberg, in producing a new dyestuff, trypan-red, which absolutely cured every infected mouse with one injection. This was the first time that a living organism was completely sterilized; that is, that every one of the parasites within the body was completely destroyed by a disinfectant.

The complete sterilization of the animal's body with trypan-red was but the first step forward in this new science. It was found that if a slightly smaller dose was injected than was necessary completely to destroy all the trypanosomes, then these would entirely disappear from the circulation for a period directly proportional to the dose given, but after that period they would again return. If the mouse were again injected with the same dose, the parasites would again disappear only to return after a shorter interval. If the injection was repeated several times, a strain of trypanosomes would be obtained on which trypan-red had not the slightest effect. In other words, the parasites became completely resistant to the large t dose of trypan-red that it was possible to inject into a mouse without causing injury to it, and this resistance was transmitted to the trypanosomes for many generations. It is possible that if a strain of trypanosomes could be brought to the maximum immunity towards a given drug, this characteristic would become constant. For example, we have in our laboratory a strain of trypanosomes which nearly four years ago was made resistant to atoxyl, and is still resistant after three and one-half years passage through normal mice.

And again, I have succeeded after three and one-half years of arduous work in producing a strain of paratyphoid bacilli resistant to arsenious acid. I have grown them on agar containing increasing quantities of the drug. At first a dilution of 1 to 28,000 was sufficient to prevent the growth of the bacilli, but now they grow freely on an agar containing a dilution of 1 to 3,500. The chemical receptors of the bacteria as well as the agglutinative receptors are entirely different from those of the original strain; for instance, the resistant strain is completely resistant to antimony, which the original strain is not. At first when the dilutions were very great it was easy to bring the strain back to normal by passing it several times on ordinary agar. However, we have passed a highly resistant strain on ordinary agar 150 times, without succeeding in bringing it back to normal.

The demonstration that these parasites could so readily become resistant to different chemical substances led to the logical conclusion that in order permanently to cure a parasitic disease it is necessary to destroy in the shortest time every single parasite with one injection of a drug, as it can readily be seen that if complete sterilization is not achieved, and frequently repeated doses are necessary, the substance would soon lose all effect, and the person or animal treated would then be worse off than before the treatment was begun.

This, then, became Ehrlich's aim: to produce a substance which was so specific for given parasites that they would be completely destroyed by one injection.

Just as a general to make sure of victory when trying to capture a fort on a hill attacks it from all sides, so Ehrlich went to work. As the parasites have many receptors specific for different groups of substances, many different substances are tried out; in other words, a combination treatment is aimed at. Therefore Ehrlich has striven in the last few years to produce more than one drug which would act as specific on the same parasite. This combination treatment also has the additional advantage that much smaller and less dangerous doses can be given than would be necessary if the maximum tolerable dose of one drug were used.

As has always been the case in the treatment of diseases, all possible drugs were tried on animals and people infected with trypanosomes. Bruce was the first to find that arsenic was a drug of appreciable value in the treatment of surra (trypanosomiasis of horses). Soon after Ehrlich started his work on trypanosomes, Thomas found that atoxyl, a compound of arsenic and anilin, would cure a large percentage of infected laboratory animals. Then Kopke used atoxyl in the treatment of human sleeping-sickness in Africa. Ehrlich started to work with atoxyl and found that it was an entirely different substance from what Béchamp, its discoverer, had thought it to be: instead of the arsenic being connected directly with the nitrogen of the anilin, and instead of this combination of anilin and arsenic being a very loose one, the arsenic was directly connected with the benzol ring of the anilin and the combination was a stable one and capable of entering into many different kinds of substitution products.

Almost at the beginning of the work it was discovered that although trypan-red possessed the power of destroying all the trypanosomes in the body of a heavily infected mouse, it had no effect whatever when mixed in a test-tube with a blood-suspension containing trypanosomes even in the strongest dilution. It was also found by Mesnil that atoxyl, which caused the trypanosomes to disappear within several hours from the circulation and glands of patients suffering from sleeping-sickness, possessed absolutely no effect on trypanosomes outside of the body in a test-tube. These two phenomena Ehrlich designated as a paradoxical or indirect action.

In order to explain this phenomenon it is necessary to glance over the general theories underlying this science as they have frequently been expounded by Ehrlich. First, what are the drugs that come under consideration at all? and then, how are these drugs effective?

Of these drugs there are three groups:

1. The arsenic group, examples of which are arsenious acid, atoxyl, and later the new atoxyl substitution products, such as acetylatoxyl, arsenophenylglycin and dioxydiamidoarsenobenzol. To this group can also be added the antimony compounds.

2. Certain azo-dyestuffs, such as trypan-red, discovered by Ehrlich and Weinberg, and trypan-blue and trypan-violet, discovered by Mesnil.

3. Certain basic triphenylmethan dyestuffs, such as parafuchsin, methyl-violet and pyronin.

The mode of action of these different drugs varies, according to Ehrlich, as follows:

1. Some substances have no effect on the parasite in test-tubes and possess no curative properties; in other words, the trypanosomes possess no receptor which fits into the atom grouping of the substances.

2. The substance has a highly destructive action on the parasites outside the body; but has absolutely no curative effect. This is best illustrated by the experiment of Koch with anthrax bacilli and bichlorid of mercury.

3. The substance has absolutely no effect on the parasites outside the body, but shows a highly or completely curative action when within the body. This is the indirect action which I have just spoken of, and under this category can be placed most of those drugs which are of practical interest.

Ehrlich has now brought forth sufficient proofs that this paradoxical or indirect action, which many other dyestuffs and arsenic compounds also possess, is due to one of the following conditions:

The first condition is that the substance, which outside the body has no effect on the parasites, is so changed in the body that it becomes effective. In the case of atoxyl Ehrlich has proved that the effect is due to a reduction of the substance within the body, and that the reduced substance is probably a compound called paramidophenylarsenoxyd. This substance he manufactured in the laboratory by reducing atoxyl, which then destroyed the trypanosomes in a test-tube in the amazing dilution of three or four millions. He theorizes from the results which he has obtained with many hundred arsenic compounds that the trypanosomes have a receptor which will combine only with three-valent arsenic and not with the five-valent arsenic, as it is present in atoxyl.

The second possibility of the indirect action is due to an inhibition of certain functions of the parasite which have to do with its reproduction or the destruction of some of its constituent parts. This is shown by the often repeated experiment in which, when trypanosomes are mixed in test-tubes with weak dilutions of certain basic dyestuffs, the trypanosomes continue to live and move, but if this mixture is injected into a mouse no infection will take place. B. Busk also proved the correctness of this by showing that certain paramecia live for many weeks in a strong solution of trypan-red but fail to multiply as usual.

A clinching discovery was that of Werbitzki, working under Ehrlich, who found that if trypanosomes were treated with certain dyestuffs (pyronin) they would lose very rapidly their blepharoplast, and that this characteristic was inherited by the offspring for many generations.

This brings us to the consideration of the several methods by which specific substances can bring about a lasting cure. Either the drug destroys all the parasites within the body by its direct and specific action, or the curative substance need kill only a certain number of the parasites, when the remaining ones will be destroyed by the rapidly formed antibodies, as has been shown by Wassermann, Schilling and Mesnil.

These are some of the fundamental theories on which a mighty structure has already been erected. Let us turn now to the practical results achieved.

Trypan-red proved a curative agent only for mice. It had no effect when used in the treatment of larger animals infected with trypanosomes. Since then it has been found by Manteuffel and Uhlenhuth to have a distinct curative action on some forms of spirilla. Nuttall has found that trypan-red is a most effective remedy in the treatment of a widely distributed disease of cattle, known best under the name of Texas fever. It has been possible to produce a drug known as arsenophenylglycin which absolutely and lastingly cures with one injection of a proper dose all animals suffering from trypanosome-infection. It has been tried on human beings suffering with sleeping-sickness with varying success. In West Africa von Raven has succeeded in curing a number of cases of human sleeping-sickness with a relatively small dose. On the other hand in East Africa, where the epidemic really is at the present moment, the results have not been so promising. It is hard to imagine what a difficult thing it is to obtain satisfactory results when the field of action is so far distant; and more important still, when the dose of a new drug that a human being can safely stand is absolutely unknown.

This can be better appreciated when we know, for instance, that the largest single dose of arsenophenylglycin in East Africa has not exceeded 1 gm., whereas lately in the Congo, Broden has given as much as 4 gm. in one injection. Frequently the specific instructions given by Ehrlich are misunderstood or the individual worker tries out his own theories. It has been Ehrlich's wish that the largest possible dose be given in one injection in fresh cases of sleeping-sickness, that have not been previously treated with other arsenic preparations, principally atoxyl. Notwithstanding these specific instructions many cases have been treated in the later stages of the disease in which permanent changes in the nervous system have already taken place or where the eye has already been damaged by a previous atoxyl treatment. Hence the results are variable and it is easy to see why any statement as to the ultimate value of this drug must be of the most conservative nature. Until a large number of fresh cases of sleeping-sickness, in which the trypanosomes have not yet invaded the spinal canal, are treated with the largest possible dose that can be given to a human being without injuring the body, our final conclusions must be withheld. At the present time in Africa two dyestuffs, trypanosan and agridinium, trypanocidal substances of very great value, are being used in combination with the arsenophenylglycin.

After having produced this latter drug and after it had been shown that syphilis could be transferred to rabbits, an animal that is easy to work with in the laboratory, Ehrlich turned his attention to that group of diseases caused by the spirilla: syphilis, relapsing fever and chicken spirillosis. Only a short time elapsed before dioxydiamidoarsenobenzol, better known as "606," was brought forward. Hata soon found that this drug definitely cured chicken spirillosis in a dose fifty-eight times smaller than the *dosis tolerata*, or the largest dose that could be given with safety to any animal. The spirilla of relapsing fever when present in the body of a mouse were also easily killed by one injection of a small dose. One-seventh of the *dosis tolerata* was sufficient to cure a rabbit infected with syphilis. This relatively small dose caused the *Spirochæta pallida* to disappear completely from the lesions within twenty-four hours. After repeatedly securing these results, Ehrlich decided carefully to start some trials with the substance on human beings. First of all, the drug was sent to Professor Alt, who tried it on dogs, and then on two of his assistants, who volunteered, in order to make sure that it would have no evil effects. It was then tried on patients. To Iversen in Russia, Ehrlich entrusted the substance to treat

human cases of relapsing fever, which he did with signal success. With one injection of 0.3 gm. Iversen was able to cure completely for the first time relapsing fever in 90 per cent. of his patients. Within a few hours after the injection, the patient usually suffers a chill of greater or less severity, followed by profuse sweating and a rapid decline of the fever to normal, at which point it remains indefinitely. The action of this drug on such an important disease as relapsing fever we must not allow to be overlooked in the fury and clamor concerning its action on syphilis.

Now to that which no doubt interests us mostly: the results of the treatment thus far obtained in cases of syphilis.

In order to be absolutely sure of his ground and to know exactly when, how, and how much of this substance could be given, Ehrlich has given away over 20,000 doses free of cost to more than 500 selected physicians throughout the world. And all he asked of them was to treat certain classes of patients (which, by the way, many of them have not done), under certain rigid restrictions which he laid down, to the effect that all patients must be confined to bed in a hospital for several days after the injection in order to be under careful observation; that only syphilities who have healthy hearts and kidneys and sound eyes, that is, in whom no degeneration is present, be treated. From these physicians he now has records of about 6,000 cases and at least 2,000 additional patients have been treated, whose records have not yet been sent in.

The great majority of investigators are astounded at the completeness and rapidity of its action. Naturally some bad results have already been reported, but to find the cause of this has been an easy matter. For instance, we heard some time ago, that certain investigators had seen in a remarkably large percentage of cases paralysis of the bladder and rectum. As soon as their technic became known it could easily be seen that the symptoms were those of methyl-alcohol poisoning, this having been used in too large quantities to dissolve the drug, and possibly being impure at that. It is remarkable that in some of these clinics where hundreds of patients have been treated, no evil effects have been found (aside from a few necroses due to a too superficial injection of the drug, usually when given in suspension). It must also be impressed on every one that Ehrlich has never claimed that this drug is harmless. On the contrary, he has on every occasion stated that in his opinion *a drug will never be found which will completely destroy all the parasites in the body with one or two injections that will be without its dangers.* He has also frequently stated that the therapeutist can only do with his chemical knife what the surgeon does with his steel scalpel.

The entire process of manufacturing the substance is a most difficult one, as it must take place under nitrogen and absolutely without contact with the air, being a highly reduced product. It is kept in little glass tubes in a vacuum. In treating patients each tube must be opened and the contents either dissolved or suspended, as the case may be, and injected immediately.

Now as to the dose: We do not yet know how much can be given to a human being without causing injury. If the dose be calculated from the average animal dose (including the monkey), a human being could be given 5 or 6 gm. at one injection. It is, however, possible that a human being can stand less than even the most susceptible animal, and that half this quantity would be the maximum dose. Even should this prove to be the case, it is clear that the doses now being employed are very small ones (0.3 to 0.8 gm.). One gram has already been given in one intravenous injection without causing any severe reaction. A difference must of course be made between the subcutaneous and intramuscular injections, and the intravenous route; but the doses now being employed are about the same for both. The average doses given are about 0.6 gm. for women and 0.8 gm. for men by the two former, and 0.3 to 0.5 gm. by the last. There are some, however, who never use less than 1 gm. intramuscularly, and 0.8 gm. intravenously.

Under the head of technic it must be mentioned that the substance can be administered in two ways: either in a clear solution or in a neutral suspension. The clear solution of the drug is either acid or alkaline; both of these can cause considerable pain, but their effect is decidedly better than that of the suspension, which is, on the other hand, practically painless. The intravenous injection is not only painless, but in the hands of experienced workers is also without danger. The method of Iversen, recently published, by which he first gives an intravenous injection of 0.5 gm. and two days later an intramuscular injection of a suspension, with the idea of creating a storage of the drug, deserves serious consideration and promises to be the method chosen by careful workers in the future.

The great fear that this drug would have a bad effect on the optic nerve as do atoxyl and acetylatoxyl, experience has proved to be groundless. In about 12,000 cases that have been treated, not one report has been made of injury to the eyes. There have been a number of relapses, due to the smallness of the dose which was administered in the beginning of this work. A repetition of the injection, with a dose even larger than that first given, has also been found to be possible and causes the symptoms again to disappear completely.

It has been found by Hoppe that in the case of the intramuscular injection arsenic can be demonstrated in the urine and feces up to the tenth day, while in the case of the intravenous injection no arsenic can be found on the fourth day. One injection of the drug into infected animals causes the spirochetes to disappear completely within twenty-four hours, and in human beings within three days.

The rapidity of the cure in the primary stage depends on the character of the primary lesion. An erosive one heals completely within four or five days, whereas it requires eight to twenty days for an indurative chancre to be healed. The effects on the secondary symptoms are even better than on the primary. The eruptions disappear in some cases as if by magic, and throat lesions also heal within two or three days. Still more wonderful is the effect of the drug on tertiary lesions. This sounds paradoxical, but Ehrlich thinks it is due to the presence in the body of large quantities of antibodies which have had time to develop. Gummas disappear, and deep ulcers become clean and granulating within a very few days.

These results seem almost incredible, but they are demonstrated daily in the clinic of Wechselmann in the Virchow Krankenhaus, and in other clinics where the drug has been used. Whether dioxydiamidoarsenobenzol effects a permanent cure of syphilis by one injection in the majority of cases, only observations covering a long period of time can show. One thing, however, is now already certain: that it is not only superior to mercury and iodid of potash in the treatment of syphilis, but that it surpasses any known drug on account of the rapidity and apparent thoroughness of its action.

As I have stated above, acid or alkaline solutions can cause considerable pain, while the neutral suspension is practically painless; but its absorption and effect is slower. The amount of pain and discomfort following an injection varies with different patients. In general, it is said that women seem to suffer less than men, and babies apparently have no pain even from a strongly alkaline solution. It has generally been found that on the second or third day after injection, there is a slight rise of temperature which abates again within a few hours, and a slight tenderness at the site of the injection.

It should be mentioned again that "606" is a powerful medicinal agent, and it should be used only after the various technics have been thoroughly studied and mastered. It will never be a drug that can be used altogether in office practice like the frequent injections of the different mercurial salts; and the greatest caution must be exercised by those who use it, after it is given to the medical profession at large. An unattainable ideal would be to have the drug used only by trained genito-urinary specialists, just as a laparotomy is performed to-day only by a surgeon.

It is for this reason that Ehrlich has withheld the preparation from the general profession until many thousand cases have been recorded by competent and careful workers. The records of these cases will act as a bulwark against any future misuse of the drug by the incompetent.

Sandhofstrasse 44.

A CASE OF TORSION OF THE GREAT OMENTUM

W. W. RICHARDSON, M.D.
LOS ANGELES, CAL.

Although the case reports of torsion of the great omentum have greatly increased since the recognition of this condition has become more general, still it is of sufficient rarity to warrant the report of all cases, particularly of the intra-abdominal variety.

History.—R., male, aged 45, referred by Dr. W. V. C. Francis, with the following history: Appendectomy during an acute attack five years ago, with suppuration of the wound; since then the patient has had frequent attacks of abdominal pain of a colicky nature. July 22, 1910, an attack of unusual severity was followed by the formation of a tumor in the right iliac region which was tender to pressure. The temperature varied from normal to 101 F. The patient had not vomited. The bowels had moved daily. August 1, ten days after the commencement of his illness, the acute symptoms had subsided. He complained of little pain and appeared quite comfortable. The evening temperature was 100 F. The pulse was not accelerated. The abdominal walls were thick. There was no tympany nor rigidity. In the right iliac region, just lateral to a broad oblique scar, was a tumor about the size of a fist, slightly tender to touch and apparently superficial to the abdominal muscles. A diagnosis was made of strangulated epiplocele and operation suggested.

Operation and Findings.—The operation on August 3 revealed a mass of strangulated omentum about the size of a duck's egg, within a hernial sac, to which it was firmly adherent. The pedicle, two finger-breadths in thickness, was found continuous with a mass of matted and deeply congested omentum within the abdomen. This intra-abdominal mass was about the size of a goose-egg, firmly attached by old adhesions to the intestines, from which it was separated with difficulty. This mass was, in turn, attached by a pedicle the thickness of the thumb to the remainder of the great omentum. Both pedicles showed plainly the marks of torsion, and both omental masses the effects of venous obstruction. The strangulation was more intense in the intra-hernial mass, but in neither was it sufficient to cause gangrene. The patient probably would have recovered from this attack, as he had from previous less severe ones, as evidenced by the dense adhesions of both masses. Both omental masses were removed and the hernial opening closed by overlapping. Recovery was uneventful.

Adhering to the classification suggested in my previous article,[1] this case belongs to the group of intra-hernial and intra-abdominal torsion about two points.

MYIASIS DERMATOSA, DUE TO THE OX-WARBLE FLIES

ROBERT T. MILLER, JR., M.D.
PITTSBURG, PA.

Myiasis dermatosa, or infection of the skin with the larval stage of dipterous insects, is fairly common in the tropics though less so in temperate zones, the infection in man most commonly being due to the screw-worm (*Compsomyia macellaria*[2]) or to *Dermatobia hominis*.[3] The following case of human infection due to *Hypoderma lineata*, one of the ox-warble flies and a parasite of cattle almost exclusively, merits report because of its rarity.

Patient.—H. S., a white boy, aged 11, of Roanoke, Va., was admitted to Johns Hopkins Hospital, Baltimore, March 13, 1908, complaining of "swelling under the chin." His family and personal history are negative.

Present Illness.—In December, 1907, the boy noticed a small round lump just below the left knee; this lump was slightly red and very tender especially at night. About two days later the lump had disappeared from the original position and was found some three inches above the knee; the following day it was still higher on the thigh and during successive days it appeared at different points along a course up the abdomen, under the axilla, over the scapula, up the right side of the neck, irregularly about the scalp, finally passing back of the ear and to the submental region which it reached about two months after its first appearance; there it remained stationary, tenderness and pain having meantime greatly decreased. During January, 1908, there appeared in the left groin a second similar lump about the size of a finger-nail. This lump followed a course up the abdomen, under the right axilla and up to the back of the neck, reaching the occipital region in about three weeks, at which time it "came to a head"; the patient picked the scab off and pulled out a "white worm about one inch long and as thick as a darning-needle," alive and moving. These lumps were occasionally stationary but generally migrated three to four inches a day. The pain was not extreme but, with the tenderness and a stinging sensation, was more pronounced at night. At times the lumps would increase to the "size of his two fists" and become very painful.

Physical Examination.—In the submental region was a superficial fluctuating mass 2 cm. in diameter about which there was but little induration or inflammatory reaction. The cervical and axillary glands were generally palpable but small. Hemoglobin 75 per cent. White blood cells 7,700.

Differential count:

Polymorphonuclear neutrophils	54	per cent.
Polymorphonuclear eosinophils	8	per cent.
Mononuclears	30	per cent.
Transitional cells	1.5	per cent.
Unclassified cells	3.5	per cent.

Pulse and temperature normal. Urine negative.

March 13, under cocain anesthesia, the submental mass was incised, disclosing a small amount of finely granular detritus

1. Torsion of the Great Omentum, THE JOURNAL A. M. A., May 11, 1907, p. 1590.
2. Stiles: Osler's Modern Medicine, I, 637.
3. Adams, J. Lee: Tropical Cutaneous Myiasis in Man, THE JOURNAL A. M. A., April 9, 1904, p. 947.

and a white larva lying in a cavity possibly 1 cm. in diameter and situated entirely in the skin. No motion was observed in the larva.

The larva was sent to Washington where, through the courtesy of Professor C. W. Stiles, it was identified as "the larva of *Hypoderma lineata* in the second stage."

The patient reported under date of June 24, 1910, that he was quite well and had had no further trouble.

While there are probably other cases recorded I have found in the accessible literature but one somewhat similar case[4] in which a small lump wandered irregularly over the chest wall, arm and back finally, at the end of five months, arriving on the cheek where it suppurated and was lanced discharging a larva subsequently identified at Washington as the larva of *Hypoderma bovis*. This case occurred in McKean County, Pa.

Hypoderma lineata and *Hypoderma bovis*, the ox-warble flies, are parasites of cattle. According to Curtice[5] the eggs of the former are deposited on the hair of the animal, carried by licking into the mouth and esophagus, where they adhere until the development of the larvæ which burrow through the tissues of the neck arriving at the skin, whence they travel in the skin itself to the back of the animal thus doing permanent injury to the hide. Folsom states that in six months of 1889 *Hypoderma lineata* alone was responsible for a loss of more than three and a quarter million dollars of which almost seven hundred thousand dollars represented injury to the hides.

In the present instance, however, the egg seems to have been deposited in the skin about the left knee, from which point the larva immediately began its migration through the skin without penetrating the deeper tissues. Neither in this case nor in Kane's case were there any constitutional symptoms, the sole inconveniences having been pain and local reaction caused by the burrowing of the larva.

I wish to express my thanks to Professor W. S. Halsted through whose courtesy this case is reported and to Dr. Thomas R. Boggs as well as to Professor C. W. Stiles for identification of the larva.

1018 Westinghouse Building.

REVISED DIRECTIONS FOR MAKING AND USING THE WRIGHT BLOOD-STAIN *

JAMES HOMER WRIGHT, M.D., S.D.
BOSTON

Reports of unsatisfactory results obtained by some workers with the blood-staining fluid which I devised a number of years ago, and recent personal experience with it, have made clear to me that the directions for its preparation and application should be revised in order that certain faults in its working may be corrected or prevented. It is believed that the revised directions which are here given will enable the multitude of users of this reagent to obtain by it brilliant staining effects with more certainty and constancy than heretofore.

PREPARATION OF THE STAINING FLUID

To a 0.5 per cent. aqueous solution of sodium bicarbonate add methylene blue (B. X. or "medicinally pure") in the proportion of 1 gm. of the dye to each 100 c.c. of the solution. Heat the mixture in a steam sterilizer at 100 C. for one full hour, counting the time after the sterilizer has become thoroughly heated. The mixture is to be contained in a flask, or flasks, of such size and shape that it forms a layer not more than 6 cm. deep. After heating, allow the mixture to cool, placing the flask in cold water if desired, and then filter it to remove the precipitate which has formed in it. It should, when cold, have a deep purple-red color when viewed in a thin layer by transmitted yellowish artificial light. It does not show this color while it is warm.

To each 100 c.c. of the filtered mixture add 500 c.c. of a 0.1 per cent. aqueous solution of "yellowish, water-soluble" eosin and mix thoroughly. Collect the abundant precipitate which immediately appears on a filter. When the precipitate is dry, dissolve it in methylic alcohol (Merck's "reagent") in the proportion of 0.1 gm. to 60 c.c. of the alcohol. In order to facilitate solution, the precipitate is to be rubbed up with the alcohol in a porcelain dish or mortar with a spatula or pestle.

This alcoholic solution of the precipitate is the staining fluid. It should be kept in a well-stoppered bottle because of the volatility of the alcohol. If it becomes too concentrated by evaporation and thus stains too deeply, or forms a precipitate on the blood-smear, the addition of a suitable quantity of methylic alcohol will quickly correct such faults. It does not undergo any spontaneous change other than that of concentration by evaporation, according to my personal experience.

A most important fault encountered in the working of some samples of this fluid is that it fails to stain the red blood-corpuscles a yellow or orange color, but stains them a blue color which can not readily be removed by washing with water. This fault I have recently discovered to be due to a peculiarity of the eosin employed. It can be eliminated by using a proper "yellowish, water-soluble" eosin. Such an eosin I have obtained from R. L. Emerson, 739 Boylston Street, Boston.

APPLICATION OF THE STAINING FLUID TO BLOOD-FILMS

1. Cover the film with a noted quantity of the staining fluid by means of a medicine dropper.

2. After one minute add to the staining fluid on the film the same quantity of distilled water by means of the medicine dropper and allow the mixture to remain for two or three minutes, according to the intensity of the staining desired. A longer period of staining may produce a precipitate. Eosinophilic granules are best brought out by a short period of staining.

The quantity of the diluted fluid on the preparation should not be so large that some of it runs off.

3. Wash the preparation in water for thirty seconds or until the thinner portions of the film become yellow or pink in color.

4. Dry and mount in balsam.

Films more than a few hours old do not stain as well as fresh ones.

95 Mountfort Street.

4. Kane: Insect Life, ii, 238.
5. Curtice: Insect Life, ii, 238.

*From the Pathological Laboratory, Massachusetts General Hospital.

Treatment of Diphtheria.—That our present method of treating diphtheria by antitoxic serum is defective is the contention of Sir Almroth E. Wright (*Proc. Roy. Soc. Med.*, October, 1910). Instead of adapting itself to the requirements of each individual case, it takes into consideration only the diphtheria bacillus and aims only at securing a high average of success. The method ignores the associated pathogenic organisms, such as the streptococcus, whose presence may involve almost as much danger to life as the diphtheria bacillus itself. The laboratory bacteriologist aims to produce a serum that will conform to accepted laboratory tests and achieve the highest possible antitoxic potency, leaving out of sight the fact that a diphtheric infection is something more than an intoxication by diphtheric poison.

New and Nonofficial Remedies

SINCE THE PUBLICATION OF THE BOOK "NEW AND NONOFFICIAL REMEDIES, 1910," THE FOLLOWING ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK ARE ASKED FOR.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

Articles which have already been mentioned in detail in THE JOURNAL are as follows:

April 2, 1910, page 1142

Filicic Acid, Amorphous.
Filmaron (Merck & Co.).
Filmaron Oil (Merck & Co.).

April 9, 1910, page 1208

Thiol (Riedel & Co.).
Thiol Dry (Riedel & Co.).
Thiol Liquid (Riedel & Co.).
Maltine with Cod Liver Oil (Maltine Co.).
Maltine with Cascara Sagrada (Maltine Co.).
Maltine with Creosote (Maltine Co.).
Maltine Ferrated (Maltine Co.).
Maltine with Hypophosphites (Maltine Co.).
Maltine with Wine of Pepsin (Maltine Co.).
Malto Yerbine (Maltine Co.).
Maltine with Olive Oil and Hypophosphites (Maltine Co.).
Maltine with Phosphate of Iron, Quinia and Strychnia (Maltine Co.).

May 7, 1910, page 1545

Agar-Agar.
Copper Citrate.
Carbosant.

May 28, 1910, page 1789

Chinosol (Chinosol Co.).
Digipuratum (Knoll & Co.).
Digipuratum Tablets (Knoll & Co.).
Secacornin (Hoffmann-LaRoche Chemical Works).
Desiccated Thymus, Armour (Armour & Co.).
Thymus Tablets, Armour (Armour & Co.).

June 4, 1910, page 1869

Mammary Substance, Armour (Armour & Co.).
Mammary Substance Tablets, Armour (Armour & Co.).
Desiccated Spleen, Armour (Armour & Co.).
Spleen Tablets, Armour (Armour & Co.).
Desiccated Parotid Gland, Armour (Armour & Co.).
Parotid Tablets, Armour (Armour & Co.).
Ovarian Substance, Armour (Armour & Co.).
Ovarian Substance Tablets, Armour (Armour & Co.).
Orchic Substance, Armour (Armour & Co.).
Orchic Substance Tablets, Armour (Armour & Co.).

Aug. 6, 1910, page 503

Nuclein.
Nucleic Acid.
Sodium Nucleate.
Nuclein, Abbott (Abbott Alkaloidal Co.).
Nuclein Solution, Abbott (Abbott Alkaloidal Co.).
Nuclein Tablets, Abbott (Abbott Alkaloidal Co.).
Pituitary Body, Desiccated, Armour (Armour & Co.).
Pituitary Tablets, Armour (Armour & Co.).
Desiccated Corpus Luteum, Armour (Armour & Co.).
Parathyroid Tablets, Armour (Armour & Co.).

Aug. 20, 1910, page 666

Diaspirin (Farbenfabriken of Elberfeld Co.).
Ferratin (Merck & Co.).
Arsenoferratin (Merck & Co.).
Arsenoferratin Tablets (Merck & Co.).
Arsenoferratose (Merck & Co.).
Thigenol (Hoffmann-LaRoche Chemical Works).
Supracapsulin.
Supracapsulin Solution (Cudahy Packing Co.).

Sept. 24, 1910, page 1115

Gualacodeine (New York Quinine & Chemical Works).
Sophol (Farbenfabriken vorm. Friedr. Bayer & Co.).
Adrin Inhalant Comp.
Adrin Troches.
Friable Tablets Protan, 2½ grains.
Friable Tablets Protan, 5 grains.
Friable Tablets Protan, 7½ grains.
Extractum Chinae Nanning (Reinschild Chemical Co.).

THEOPHYLLIN SODIO-ACETATE — Theophyllinæ sodio-acetas—Theophyllin sodium acetate $C_7H_7N_4O_2Na+CH_3COONa+H_2O$, is a double salt of sodium acetate and 1, 3-dimethylxanthine-sodium (theophyllin sodium).

It is a white crystalline powder, containing about 60 per cent. of anhydrous theophyllin. It dissolves in about 20 parts of water at 25° C. (77° F.), but is insoluble in alcohol or ether.

Actions and Uses.—It has the diuretic properties of theophyllin reinforced by the diuretic action of sodium acetate, and being more soluble, it is claimed to be more readily absorbed and to be better tolerated than theophyllin.

It is said to be useful in cardiac affections, nephritis, dropsy, etc.

Dosage.—0.2 to 0.35 Gm. (3 to 5 grains), best given after meals.

Proprietary Preparation:

ACET-THEOPHYLLIN-SOD'UM—Acet-Theophyllin-Sodium is a name applied to theophyllin sodio-acetate.

Manufactured by C. F. Boehringer & Soehne, Mannheim, Germany (Merck & Co., New York). U. S. patent Nos. 667,381 (Feb. 5, 1901; expires 1918); 757,328, 757,329 (April 12, 1904; expires 1921).

PHARMACEUTICAL PREPARATIONS ACCEPTED FOR N. N. R.

The following dosage forms of accepted proprietary articles have been accepted for N.N.R.:

Syrup Thiocol Roche.—A syrup containing thiocol 10.5 gm. in 100 c.c. (6 grains in a fluidram).

Therapeutics

THYROID

The thyroid is a ductless gland that has so many physiologic activities that it belongs in a class by itself. The desiccated thyroid glands of the Pharmacopeia are offered as a yellow, amorphous powder, having but slight odor or taste, and being but partially soluble in water. This powder is prepared from the thyroid glands of the sheep, and one part of this official powder should represent about five parts of the fresh gland.

Around the thyroid are small gland structures called parathyroids, and in early experiments with animals in which the thyroids were removed more or less of these parathyroids were also removed; consequently, many of the symptoms described as due to thyroid extirpation were really due to the combined removal of both thyroid and parathyroids. It has since been positively determined that these two gland structures have very different physiologic activities and that both are necessary for the health and welfare of the individual.

In 1895, Schiff first showed that dogs could not live when these glands had been totally removed, but would live if part of the thyroid, and, therefore, some parathyroids, were left. It has since been shown that the convulsions are really due to removal of the parathyroids. The adult human thyroid varies considerably in size, depending on the age of the individual, on the sex, and on the locality in which the individual resides. It may vary in weight from 20 to 60 grams. In the female, the gland enlarges during menstruation and pregnancy, and much more frequently becomes diseased (either simply enlarged or atrophied, or hypersecretes or hyposecretes) in the female than in the male. In both sexes the gland more or less atrophies after the age of 50. It has been proved that the thyroid glands are larger in individuals residing at the seashore, and larger in certain regions than in other regions, this being due, possibly, to the character of the water drunk or to the different constituents of the atmosphere. At the seashore there is more iodin in the air, and iodin in any form is a stimulant to the thyroid gland.

Exactly how the thyroid carries on its various activities has not been discovered. The colloid secretion is an important part of its function, and although not directly utilized, it may be used by the gland as a storehouse for the substances that it needs in performing its other work. If it is in large amount the gland is pathologic, and in

very large amount a cystic goiter is the condition. If the thyroid, as a whole, underfunctionates, various symptoms and conditions develop, which will be explained later, and if it becomes actually diseased and its secretion becomes greatly diminished or even nil, *cretinism* and *myxedema* are the consequences. If, on the other hand, its normal activities are increased, various symptoms develop, which will also later be described, and if the secretion is excessive the conditions of Graves' thyroid disease, *exophthalmic goiter,* is the consequence. It is certainly readily conceivable and seems to be true from clinical experience that certain activities of the thyroid can be perfect while other of its activities are impaired, and varying symptoms are the results of such physiologic changes. It is probable that certain activities of the thyroid may be permanently increased, diminished, or absent, and yet other activities be normal, and many unexplained clinical conditions follow.

If the activity of this gland, as is true of all the internal secreting glands, is greatly impaired, other glands may take up, or assume, or attempt to do part of the thyroid's work. This seems to be especially true of the hypophysis cerebri when the thyroid is diseased. The opposite is also true, that the thyroid becomes disturbed in pituitary disease.

The physiologic functions of the thyroid may be summed up as follows: Its perfect secretion is necessary to the growth of the body in childhood; it is necessary for normal mental ability; it is necessary for proper nitrogenous metabolism; it is necessary for the proper development and distribution of fat; it is necessary for the proper development of the genital organs and their secretions, for normal menstruation and normal pregnancy, and to prevent nitrogenous toxemias.

If the thyroid is absent or its secretion is insufficient in the child, the child becomes a *cretin*, which means that it shows short, stunted growth; is fat and flabby; has a round, full, expressionless face; has a sluggish mentation; and is a semi-idiot. If the gland is extirpated or its secretion becomes enormously diminished or absent, *myxedema* is the result, a condition occurring most frequently in women after the menopause, in which there is an enormous putting on of weight, mostly fat; a puffy condition of the skin, due to an excessive amount of mucin in its interstices; a gradually diminishing mental ability; the same condition of expressionless, fat, rounded face as seen in the cretin; soon circulatory debility; various maldigestions; and kidney insufficiency.

If any individual does not have normal thyroid secretion his mental ability is impaired, and the administration of thyroid substance will often improve the condition. Disease of the thyroid may even be the cause of some melancholic insanities, and such insanities are sometimes improved by the administration of thyroid.

The administration of thyroid will increase nitrogenous metabolism and increase nitrogenous waste, as shown by the excretion of nitrogen in the urine. When the nitrogenous metabolism is impaired and not sufficient nitrogen is excreted, the feeding of thyroid will increase the nitrogen excreted and improve the general condition. Also in nitrogenous toxemias as occurs in puerperal eclampsia and in uremia from kidney insufficiency, thyroid will often prevent the cerebral toxemia and may aid in curing the condition.

If the thyroid is insufficient in its secretion and not sufficiently diminished to cause myxedema, the weight is increased by large deposits of fat. This is noticed when the thyroid normally diminishes its secretion after the age of 45 or 50, when most individuals put on weight, especially women. It is also noticeable at other ages, especially in women, if the menstruation unaccountably ceases. This deposit of fat is the marked feature of *adiposis dolorosa*, and all of these patients are benefited, the fat is diminished and the weight is decreased by administration of thyroid. *Per contra*, if the thyroid secretion is excessive, as in Graves' disease, the patient loses weight and the fat is diminished.

The thyroid should be fully developed at puberty, and it seems to be one of the predisposing causes of the beginning of menstruation in girls. If the thyroid is not developed and normally secreting the genital organs do not develop or properly functionate. If it does not secrete properly amenorrhea is the consequence. If it over-secretes, menorrhagia is the result. It normally enlarges a few days before the menstrual epoch, and with this hyperemia comes all the exciting and nervous disturbances which increased secretion of the thyroid can cause. The anemic condition termed *chlorosis* bears some close relation to disturbance of the thyroid, and the administration of thyroid is as efficient in correcting chlorosis and in causing normal menstruation (and often more efficient) as iron. The healthy enlargement and increased secretion of the thyroid during *pregnancy* is essential for the proper growth of the fetus and the prevention of nitrogenous toxemias from the double metabolism of both mother and child. If the thyroid does not diminish its secretion after the *menopause*, symptoms of its activity are troublesomely evident, viz., hot flashes and vasomotor dilatation, nervousness, breathlessness, sleeplessness, and palpitation.

The less the ability of the thyroid to functionate normally the less the protein that should be taken into the system; also, much meat tends to keep up the hyperactivity of the thyroid in Graves' disease, the nitrogen seeming to stimulate the gland. Certain it is, such patients do better without meat. On the other hand, in under-secretion of the thyroid as generally seen after the age of 60, the patient demands and requires less and less meat, and is doubtless better off without much meat.

The tendency of the human being from 45 upward gradually to have an increase of blood-pressure, and gradually to develop a tendency to connective tissue formations in various parts of the body, is *pari passu* with the diminished thyroid secretion. Thyroid secretion has a constant activity in lowering blood-pressure, and the administration of thyroid will do the same. If the thyroid is removed from young animals they do not grow, become stupid, have a lower temperature, and unless thyroid is administered, sooner or later die. If an older animal has the thyroid removed, the mental condition becomes sluggish, the muscles become weak, the skin thickens, the hair may fall out, he may or may not lose weight, the temperature is diminished, circulation is impaired, anemia may develop, and if the animal lives long enough sclerosis of the larger vessels may occur.

It has been estimated that there are sufficient blood-vessels passing through the thyroid to allow the whole blood of the body to pass through the gland at least once an hour. If the circulation of the thyroid is enormously increased, as it is in the dilated condition of the blood-vessels in Graves' disease, the blood could go through the gland perhaps twice as frequently as normal, consequently the blood would contain twice as much thyroid secretion as normal. This fact alone would be a cause of the thyroid intoxication and symptoms of exophthalmic goiter.

The colloid secretion consists of two albuminous bodies, and there is a small amount of phosphorus and a

nucleoalbumin in the gland. In 1895, Baumann discovered iodin in the colloid secretion and prepared a substance which he called iodothyrin, which is an iodin protein combination which it was supposed would represent the activity of the gland, but has been proved not to act like thyroid substance. While the colloid substance is the chief seat of the iodin content, the thyreoalbumin of the follicular cells has been shown to contain the element (Aeschbacher, *Berl. klin. Wchnschr.*, Feb 12, 1906).

The administration of thyroid will increase the nitrogen, sodium chlorid, and phosphorus output in the urine, while a diminished secretion of thyroid may decrease the output of nitrogen and phosphorus. The thyroid is probably the only organ of the body that contains iodin, and there is more iodin in the thyroids of individuals living at the seashore or where goiter is endemic than in other regions. There is also more iodin in the thyroid during its period of greatest activity, viz., from 15 to 40. The activity of the thyroid is diminished after perhaps its primary stimulation, in *infectious diseases, tuberculosis*, and *chronic alcoholism*, and the iodin is also decreased in these conditions. *Circulatory disturbances* that would cause chronic passive congestion seem to diminish the activity of the thyroid and the amount of iodin it contains. *Carcinoma* has been shown to cause an increased amount of iodin in the thyroid. The administration of iodin is a stimulant to the thyroid gland and will increase the iodin content to a certain amount, and then it is increased no more. This shows that there is no necessity for enormous doses of iodid since its best action is perhaps in stimulation of the thyroid and increasing its iodin content. *Syphilis* and the prolonged administration of mercury seem to diminish the secretion of the thyroid and may cause its early atrophy, hence perhaps the cause of the frequent connective tissue sclerosis and arteriosclerosis that occurs after this disease and its cure by mercury. *Chronic lead poisoning* will cause the thyroid secretion to be diminished. Ordinary circulatory stimulation, especially with such drugs as caffein, tea and coffee, will stimulate the gland to increased activity. So do single doses of alcohol; but not so chronic alcoholism. Arsenic is a stimulant to the thyroid secretion; phosphorus is a stimulant to the thyroid. The glycerophosphates seem to diminish thyroid secretion. The thyroid seems to regulate the calcium metabolism, and it has seemed that thyroid feeding was valuable in the slow deposit of callus about a fracture. Also, the lack of bone growth in the cretin child is so stimulated by thyroid as to suggest an action on calcium or phosphate metabolism.

Various investigators, notably Hunt and Marine, have shown that iodin is necessary for the normal thyroid activity and is an index of the physiologic value of the thyroid secretion (thyreoglobulin). As to whether the administration of iodin will increase the activity of the thyroid gland depends on the gland's ability to store it and not on the method of administration. In other words, the greater the glandular hyperplasia the greater the amount of iodin it will store. The percentage of iodin which the thyroid may contain varies, and the thyroid gland substance obtained from various sources varies greatly in its iodin content, and consequently greatly in thyroid activity.

Reid Hunt (THE JOURNAL, October 19, 1907) has shown that the iodin of the thyroid glands of animals not only varies in different animals, but from time to time in the same animal, and varies with the character of the food taken. He has found that while thyroid substance that does not contain iodin is not absolutely inactive, it has a low degree of activity. He has shown that animals are more susceptible to morphin if their thyroids are normally active or if they are given active iodin-containing thyroid stuff. Hence this bears out the clinical findings that patients with Graves' disease often do not bear morphin well, and, as he suggests, this may be the reason that they do not bear ether and chloroform well, their susceptibility to narcotics being perhaps increased by the increased thyroid secretion. As the activity of the thyroid substance depends so largely on iodin, and as the iodin content varies so greatly in the different preparations on the market, it may be well when thyroid treatment is indicated to administer conjointly a small amount of iodin, perhaps best as sodium iodid.

The activity of thyroid, when administered, seems to be parallel with its iodin content, and frequently hyperplastic thyroids will become smaller in size under the administration of any iodin-containing substance. Marine and Lenhart seem to have shown (*Arch. Int. Med.*, November, 1909) that iodin in sufficient amount will prevent enlargement of the thyroid or hyperplasia of the thyroid. This seems negatively to show that goiter develops on account of insufficient iodin, and that the regions where goiter develops are regions where iodin is deficient in the water and air. It seems proved that during the stages of enlargement of the thyroid the iodin is deficient. This does not always of necessity mean that iodin is absent or deficient in the air or water or foods taken, but that for some reason or other it is not assimilated and, therefore, that there is a starvation of iodin.

Although boiling the water or changing the water seems to decrease goiter in some instances, this by no means is an argument absolutely in favor of the infectious origin of goiter. Boiling the water might cause such a deposit or chemical change in the substances in the water as to remove a chemical substance that was antagonistic to the iodin normally taken into the body, or that caused the formation of a compound which would prevent the iodin from being normally absorbed or normally utilized by the thyroid.

Marine and Lenhart report the following findings: The iodin content of the thyroid gland varies inversely with the degree of active hyperplasia; partial removal of the thyroid is normally followed by a compensatory hyperplasia of the remaining portion; iodin starvation increases the amount of the hyperplasia; the administration of iodin causes the hyperplasias of the thyroids of all animals to revert to the colloid state; in whatever form iodin enters the organism, it is stored in the thyroid, and that regardless of how much there is in other tissues; the rapidity of accumulation and the amount of iodin thus taken up by the thyroid depends on its size and the degree of active hyperplasia; and the nitrogen excretion seems to bear a distinct relation to the amount of iodin in organic combination in the system.

It has been shown that thyroid substance is the most active of any iodin-carrying compound as a stimulant to thyroid gland activity. Clinically it has been found that iodin, even in small doses, administered as an iodid, when there is hyperactivity of the thyroid, has caused the same disturbance that desiccated thyroid has caused, when administered under the same conditions. This is not true in patients who have normal thyroids. In other words, iodin has no noticeable effect clinically on the activity of the thyroid in normal individuals, while thyroid feeding will cause its physiologic action in such individuals.

It seems to be a fact that in exophthalmic goiter the thyroid is abnormal either by hypersecreting or by having a perverted secretion, and this seems to be a cause of the disease. The active enlargement may be a compensatory condition caused by a disturbance of nutrition. It seems positively demonstrated and known that hyperplasia of the thyroid occurs at some period in every case of exophthalmic goiter, and the severity of a case of exophthalmic goiter generally varies directly with the degree of colloid and coincident lymphoid hyperplasia. It is stated that the operative mortality of exophthalmic goiter is greater in these instances than in those in which there is marked hyperplasia and a low iodin content. Also, the greater the lymphoid hyperplasia of other glands apparently the greater the mortality. It seems, then, in exophthalmic goiter that the gland is hyperactive, and that its hyperactivity is compensatory for some deficiency in the organism.

Marine claims that the hypersecretion of the thyroid in exophthalmic goiter is a quantitative increase, but really a deficient qualitative secretion, and that the final stage of every case of exophthalmic goiter, if the patients do not soon die, will be myxedema or relative recovery; in other words, under-secretion of the gland. Myxedema and cretinism represent the final stage of a prolonged deficient secretion.

It has been noted that the thyroids of new-born animals do not contain iodin. It has also been noted that when part of the thyroid gland is removed the other part will show an increased amount of iodin. Hunt states, too, that an exclusive meat diet leads to a diminution of the amount of iodin in the thyroid. It has also been shown that if the iodin content of the thyroid is diminished and the thyroglobulin consequently diminished, the thyroid tends to hypertrophy, and a cystic goiter generally shows a diminution of iodin.

Hunt says that the normal swelling of the thyroid gland during menstruation and pregnancy is more marked in goitrous regions than elsewhere, and in these places, he says, there is less iodin in the thyroid. Consequently, the inference should be drawn that a simple hyperplastic thyroid without a great increase in colloid will become normal in size by the administration of a small amount of iodin, sometimes a few doses being sufficient, each perhaps not more than 0.20 gram (3 grains). If, however, the condition was that of marked Graves' disease, iodin would perhaps increase the activity and do no harm.

Either thyroid or iodin may increase the menstrual flow as has often been proved clinically, while large doses of an iodid may cause its cessation.

Hunt has found that the feeding of potassium iodid to animals has diminished their resistance to morphin as does thyroid feeding, because it stimulates the thyroid gland. The stimulation, however, with any iodin soon reaches its limit, as Hunt says, probably when all the thyreoglobulin has its full iodin content. The adult thyroid contains about 0.004 gram of iodin.

Thyroid has no action locally, but acts only after absorption. Its preparations are probably broken up in the stomach into various proteid combinations, but the gastro-intestinal secretions do not impair its activity. If taken on an empty stomach, if in at all large dose, it causes some nausea. Its first action is as a vasodilator, and the blood-pressure is somewhat lowered. While very large doses quickly absorbed might cause cardiac depression and cerebral excitation, such symptoms from one dose are rarely seen. It is only from small doses continued for some time that its physiologic action is evident. The symptoms that it causes when its action is thoroughly in evidence are nervous excitation, restlessness, sleeplessness, palpitation, a feeling of general warmth by vasodilatation, sweating, loss of weight, perhaps loss of appetite, diuresis, and an increase of nitrogen and phosphorus (P_2O_5) in the urine. Such an action from thyroid represents intoxication from it, and is undesirable, and should be avoided. If such action occurs the drug should be given in smaller dose, or perhaps not administered at all.

The iodothyrin of Baumann does not represent the whole of the activities of the thyroid, consequently thyroidectomized animals can not be kept alive or in health by feeding iodothyrin as they can by feeding thyroid substance. From the thyroid have been obtained a nucleoproteid which contains phosphorus and a globulin which contains iodin. This last is termed thyroglobulin, and Oswald (*Münch. med. Wchnschr.*, Aug. 15, 1897) says that it is the iodin globulin that increases nitrogenous elimination, while the nucleoproteids, phosphorus stuff, do not. The iodin of this thyroglobulin varies in amount, while the elements of carbon, nitrogen, oxygen, hydrogen, and sulphur remain constant. If iodid of potassium is fed to an animal before its thyroid is removed the colloid will contain more iodin than if such is not administered. Oswald thinks that, when the thyroglobulin which circulates in the blood is metabolized and broken up, the iodin is not entirely lost, but again returns to the thyroid and may again be used. Investigators seem to have proved that to increase nitrogenous metabolism the thyroglobulin of the thyroid substance fed must contain iodin. They also seem to show that it is the iodin combination that gives the thyroid its antitoxic power. In other words, a thyroid short on iodin does not allow normal nitrogenous metabolism to take place in the body and is not normally antagonistic to either infections or to the toxins of metabolism.

While iodin has been found in the parathyroid glands, it has not been determined that it is constant in these glands. It is possible that the parathyroids may assist in thyroid work if the latter is diseased, and it has been shown that the parathyroids hypertrophy if the thyroid is in large part removed. The same is true of the hypophysis cerebri. The reverse is also true; if the hypophysis is diseased or the parathyroids in part removed, the thyroid secretion seems to be disturbed.

The antitoxic importance of the thyroid secretion is shown by the fact that the urine of animals deprived of their thyroids is much more toxic than of normal.

Directly or indirectly, the thyroid also seems to have some control over the development of connective tissue, as when the thyroid secretion is diminished from any cause or this occurs normally at the age of the thyroid's atrophy (viz., after 45) the connective tissue may increase in various parts of the body.

The apparent size of the thyroid gland is no criterion as to the amount of normal secretion it is furnishing. It may be large and be producing much less than the proper amount of normal secretion, and it may be apparently small or not at all enlarged and be producing a much increased amount of secretion. It is positive that an increased secretion from this gland stimulates and irritates the brain and that a diminished secretion causes mental apathy and mental sluggishness, but whether an increased secretion or abnormal secretion can excite a brain to a mania, or an under-secretion can cause cerebral degeneration, has not been determined.

(To be continued)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, DECEMBER 3, 1910

CHRONIC ANTIMONY POISONING AMONG TYPESETTERS

The occupational diseases form a group of disorders which have not received the attention which their importance merits. Too often it happens that the physician is satisfied with an indefinite or incomplete statement from the patient as to the nature of his vocation or calling. A fact of prime etiologic significance is thus lost and the patient is the sufferer in more than one particular. In considering the common occupational diseases there is also the danger of assuming that atypical symptoms are unusual manifestations of the suspected cause. Further inquiry might elicit valuble clues.

This is well illustrated by the recent studies of Strumpf and Zabel,[1] who have been in a position to follow carefully the physical condition of a large number of typesetters in Strassburg, Germany. One thing which impressed them was the rarity of typical cases of lead-poisoning. They observed, however, with great frequency, a clinical syndrome characterized by a fatigued expression, nervousness, irritability, insomnia, exhaustion especially in the morning hours, vertigo, headache, particularly in the frontal and occipital regions, general or local muscular pains, neuralgic pains in the extremities, nausea and vomiting, and constipation. Mild, moderately severe and severe cases were encountered. The authors find evidence in the literature that this symptom-complex has been looked on as a manifestation of chronic lead-poisoning. The patients showed no elevation of blood-pressure, which, as Krehl has shown, is so common in plumbism from spasm of the arterial walls; the erythrocytes had no basophilic granules; and leukocytosis was lacking. Nor did the urine show traces of albumin or bile. On the contrary, the red count was almost or quite normal even in the severe cases with an absence of basophilic granules and there was leukopenia with eosinophilia between 10 and 25 per cent. (Typesetters without symptoms possessed as high as 9 per cent. eosinophils.) The urine was normal and likewise the blood-pressure.

Since the facts observed suggested no connection with plumbism, Strumpf and Zabel visited the presses where the men were employed, and found, on inquiry, that a mixture containing lead (70 to 80 per cent.), tin (5 per cent.), and antimony (15 to 20 per cent.) was used in covering the type. As tin is without importance toxicologically, their attention was directed to antimony. Rabbits were subjected to chronic antimony poisoning and soon exhibited a well-marked reduction in number of the white cells with increase in the eosinophils up to 25 per cent. The feces of the poisoned rabbits yielded an antimony mirror with Marsh's test.

From this experimental evidence, corroborating their clinical blood-findings as it did, Strumpf and Zabel felt that their patients had been suffering from chronic antimonial poisoning. Since they obtained a positive Marsh test for antimony from the stools of two patients, there can be little doubt that their surmise is correct.

Absence from work for two to three weeks, with exercise in the open air and a milk diet, sufficed usually to restore the patients' health. Thus a new danger to typesetters working with antimonial compounds is brought to light and a distinct contribution added to the growing subject of occupational diseases.

1. Strumpf and Zabel: Ztschr. f. exper. Path. u. Pharmakol., 1910, lxiii, 242

INSANITY IN THE MILITARY SERVICE

Among the medical officers of the Army and of the Navy lately there has been a remarkable growth of interest in psychiatry. In other countries, notably France and Germany, the relation of insanity to conditions of military service has received considerable attention and an extensive literature on the subject is available, but till now the matter has been almost ignored in the United States. The interest which is now being shown in so many different ways is due in part to the influence of the clinical instruction given by Dr. William A. White to the student-officers of the service schools at Washington.

The opportunities for obtaining practical work in psychiatry, even at the best medical schools, are pitifully meager, and it is not at all surprising that the adequate presentation of the subject under such conditions as the Government Hospital for the Insane affords should enlist the attention and, in many cases, the enthusiasm, of the young officers and of the older ones who are assigned from time to time for courses of instruction at the Army and Navy medical schools. One result of the newly awakened interest is that already valuable observations on insanity in the military service are being published.

Some observations of especial interest are those of Passed Assistant-Surgeon Heber Butts[1] and Captain Robert L. Richards, Medical Corps U. S. Army.[2] Dr. Butts gives interesting statistics regarding the 528 officers and men who have been admitted to the Govern-

1. United States Naval Medical Bulletin, October, 1910; abstracted in THE JOURNAL, Oct. 22, 1910, p. 1501.
2. Am. Jour. Insanity, July, 1910; abstracted at length in THE JOURNAL, Sept. 3, 1910, p. 875.

ment Hospital for the Insane at Washington from the active lists of the Navy and Marine Corps during the period from Jan. 1, 1899, to June 1, 1910. He comments on some of the relations of race, rank or rating, types of mental disease and etiologic factors in this group of cases. Some of the observations agree with the facts ascertained by statistical studies of admissions to state hospitals for the insane, but there are some interesting variations which must reflect the effects of conditions of military service and which must have great interest for military medical officers when they have been studied at greater length.

In spite of a high prevalence of syphilitic infection among the enlisted men of the Navy, only 5.11 per cent. of all admissions to the hospital were for general paresis. In the New York state hospitals for the insane, paretics form about 19 per cent. of all male first admissions. It is safe to conclude that by far the larger proportion of cases of paresis in sailors occur after they have served their enlistments and left the Navy. The government suffers from the large number of men incapacitated from duty on account of syphilis, but the communities in which the discharged seamen take up their residences subsequently bear the burden of supporting the paretics who find their way into state institutions a dozen years after their careers in the Navy have closed.

The large proportion of cases of dementia præcox, 33.52 per cent. of all admissions in this group, is largely accounted for by the low ratio of paretics and by the youth of the men admitted, the number of cases of involutional psychoses and of senile deterioration, which form so large a part of all admissions to state hospitals, being for these reasons much less.

By far the most important phase of insanity in the military forces is, as Dr. Butts points out, its relation to recruiting. He shows that the expense to the government which enlistment of an insane man occasions, the detriment to the efficiency of the service involved by his presence and the difficulty in deciding whether or not he shall be given the benefits which come to those who have received their disability in "line of duty," all combine to make the determination of the mental status of the applicant for enlistment of the highest importance. In forty-four cases, or nearly 9 per cent. of all in the group considered, mental disease became apparent within thirty days from the time of enlistment, and synopses of typical cases are given in which there was plenty of evidence at the time of enlistment that the men were insane or mentally inferior. This seems to indicate that the present system of examination is inadequate to exclude with a conspicuous degree of success actually or potentially insane men from the Navy and Marine Corps. It is to be remembered that the Navy is particularly exposed to this danger, for, besides the men who enlist for reasons which are actually the outgrowth of delusions, a considerable number enlist for the purpose of escaping from an environment in which they have failed to "make good," and not a few for the purpose of being sent to remote places where they hope to escape the consequences of misdeeds. Among men of this class many are constitutionally inferior and some are insane.

To guard against enlisting such men is an important duty of medical officers. Dr. Butts suggests the advisability of devising some means of giving a practical mental examination, and that accepted candidates be required to serve a six months' period of probation in order to determine their mental status and their aptitude for the service and for the rating in which they have enlisted. We are inclined to think that the factor which will have the most influence in selecting recruits with a smaller percentage of insane and mentally defective men will prove to be the successive classes of young medical officers coming into active duty with practical knowledge of the fundamentals of clinical psychiatry. When a considerable number of the earnest and well-trained young medical men who are at present entering the Navy add to their professional training in other directions such a knowledge of mental diseases as can be obtained at St. Elizabeth's, there will be fewer insane men enlisted, especially of the type of which Dr. Butts gives examples. This work is of so much practical importance that it seems that even more attention might be given it in the courses of instruction at the service medical schools at Washington.

AMERICAN JOURNAL OF DISEASES OF CHILDREN

The first number of the *American Journal of Diseases of Children*, the new periodical to be published by the American Medical Association, will appear in January, 1911. This journal is established at the request of a large number of the leading pediatricians of the country. At the St. Louis session, the Board of Trustees recommended to the House of Delegates that such a journal be established and the recommendation was adopted. At its meeting in June the board decided that the publication should begin in January, and that there should be an editorial board of six, as in the case of the *Archives of Internal Medicine*. At the October meeting the Trustees selected, from those recommended by a committee of pediatricians previously appointed for the purpose, the following Editorial Board: William Fitch Cheney, San Francisco; Frank Spooner Churchill, Chicago; Edwin E. Graham, Philadelphia; John Howland, New York City; Abraham Jacobi, New York City; John Lovett Morse, Boston.

The journal will be of a high order. The character of the members of the editorial board is a guarantee that the articles presented will be creditable to American pediatrics. The interests of the general practitioner are to be kept especially in view, inasmuch as the treatment of children forms a large portion of his work.

The more technical articles of the specialist and the research worker of course will have the prominent place in the journal. Among the contributors to the first number will be Abt, Bevan, Dunn, Fetterolf, Gittings, Hamill and Blackfan, and Jacobi will write an introductory editorial. In addition, there will be comments on live topics in pediatrics, as well as abstracts of current pediatric literature by pediatrists who know what is of real interest.

From a mechanical point of view—paper, printing, illustrations, etc.—the *American Journal of Diseases of Children* will be equal to the *Archives of Internal Medicine*, which means that it will be equal, if not superior, to any other scientific periodical in this or in any other country.

It is needless to say that the new journal is not published as a money-making proposition. It is expected to pay its way; that is all. The Association is now peculiarly well equipped to publish high-class medical periodicals—better even than the majority of the large printing establishments. When the transfer is made to its new building this month, the printing establishment of the American Medical Association will be one of the most complete of the kind anywhere, making it possible to produce the best work in the most economical manner. As a matter of fact, no private individual could produce such a journal as the *Archives of Internal Medicine* at its subscription price, unless he did it for purely altruistic purposes, disregarding business principles. Likewise, it would be impossible, at the proposed subscription price, for a private individual to publish without loss a journal such as the *American Journal of Diseases of Children* will be.

Our European confrères are being led to acknowledge that American medicine, in all its branches, is forging to the front. In fact, they are forced to concede that in some branches we excel. They will soon have to admit that our current periodical literature is also setting a standard. It is intended that the *American Journal of Diseases of Children* shall be a credit to American pediatrics, and we bespeak for it the hearty support of the profession. An announcement, with the subscription price, appears[1] in the advertising pages of this issue.

Current Comment

MEDICAL EDUCATION IN COLORADO

Early in the present year an agreement was made to merge the Denver and Gross College of Medicine, of Denver, with the University of Colorado School of Medicine, the latter school being located at Boulder. By the terms of the merger the work of the first two years would be continued at Boulder, but the work of the clinical years would be conducted at Denver, where better hospital facilities were obtainable. Before such an arrangement could be made, however, it was necessary to secure an amendment to the state constitution, which specifically stated that all the work of the state university should be conducted in Boulder. An amendment, therefore, providing that "all but the first two years of the departments of medicine, dentistry and pharmacy" might be conducted at Denver, was submitted to the people at the recent election. Incidentally, perhaps this is the first time that the people individually have had the opportunity to express an opinion in regard to medical education. The result shows that, at least in Colorado, they are in favor of better standards, for the amendment was adopted by a large majority. This amendment permits the merger between the two medical schools to be completed Jan. 1, 1911, according to the terms of the agreement. Thereafter, Colorado will have but one medical school and that will be conducted by the University of Colorado. Two years of collegiate work are required as the minimum of preliminary education, which standard has been adopted also by the Colorado Board of Medical Examiners. Prospects are good, therefore, for the rapid improvement of medical education in Colorado.

FILTRATION OF WATER-SUPPLIES

A recent number of the *South African Journal of Science* contains a paper by Dr. D. M. Tomory on methods of water purification, which indicates that South Africa is alive to the important question of pure water-supplies. The Modder River, which supplies Bloemfontein, cannot be effectively purified by sand filters, since they become clogged by the clay held in suspension. A remarkable improvement was obtained by precipitating with lime and permanganate and filtering rapidly through a mechanical filter, which caused a reduction of the deaths from typhoid fever from 83 per 10,000 in 1896 to 2.75 per 10,000 in 1908. On account of the necessity of increasing the capacity of the plant, the authorities made a tour of inspection in Europe and America to obtain ideas on water purification. In the northern United States and in England, sand filtration was generally found efficient, but in the southern United States and in Egypt conditions analogous to those in South Africa were found, which had been met in similar ways, by precipitation and mechanical filtrations. Tomory concludes that the extraordinary rapidity of mechanical filtration is not accompanied by special risk of pollution when the process is used intelligently in connection with chemical precipitation processes, and that, in cases of non-settling waters which can be purified only by such precipitation, rapid filtration is decidedly preferable as at once more efficient and economical.

HEALTH IN THE TROPICS

The remarkable success of Colonel Gorgas and his co-workers in doing away with the excessive prevalence of infectious diseases in the Canal Zone has been referred to previously.[1] The direct effect of tropical conditions on the human organism cannot, however, be viewed with as much satisfaction as is entertained by Colonel Gorgas if

1. Advertising page 43, this issue.

1. THE JOURNAL, Aug. 27, 1910, p. 783.

we accept the opinion of an editorial writer in the June *Bulletin of the Manila Medical Society*. This writer presents a rather depressing view of the effect on health of prolonged and permanent residence in tropical countries. He pictures vividly the steady decline in energy and efficiency in those from temperate climates who take up their residence in the Philippines. He remarks gloomily that if one "is so constituted that he can accept this lowered energy efficiency as a conservation process and regulate his life accordingly" he "usually gets along fairly well for a number of years and finally reaches a condition of general sluggishness of mind and body which is characteristic of the majority of those whose lives are spent in tropic climates." In other words, life in the tropics is simply life on a lower plane of accomplishment. The condition is not one of disease, but simply normal life governed by a different measure of efficiency. This writer is especially severe on foreigners from temperate climates who attempt to rear children under tropical conditions.

RED CROSS SEALS—A WARNING

Last week we called attention to the American National Red Cross seals, and heartily endorsed this method of raising funds for a splendid cause. The American National Red Cross, of course, has no control over the idea, and cannot prevent others from adopting it. We probably should have given this word of caution last week, so that physicians would not be misled into endorsing some imitation of the idea without thorough investigation. During the last few days we have received letters from physicians showing that another stamp is being promoted, and at least one physician has been misled. This bears the label of the "National Antituberculosis Association, Chicago," has in its center the word "hope" in white on an orange background, and, instead of the red cross, has the ordinary cross in black. The American National Red Cross has appointed the Illinois State Association for the Prevention of Tuberculosis as its sole state agent for Illinois for the distribution of the Red Cross seals. We have consulted the officers of this organization, who state that this "National Antituberculosis Association, Chicago," is not recognized by them. From the officers of the Chicago Tuberculosis Institute we learn that the organization issuing this black cross stamp has not made known how its funds would be disposed of, and that they do not recommend it to the public for support. It is reported that those who retail these particular stamps make a profit[1] of 40 cents on the dollar; those who sell the American National Red Cross seals do it for altruistic purposes. We again urge physicians to cooperate heartily with the American National Red Cross and the branches of the National Association for the Study and Prevention of Tuberculosis, in their work, and also to discountenance any unauthorized scheme that may mislead the public.

1. In the form letter which the "National Antituberculosis Association, Chicago," is sending out, signed by John P. Klein, secretary, it is stated: "This association does not ask any club to do this work entirely for charity, as we feel that some compensation should be given for the time and energy used in selling these stamps, and we allow clubs, or individual members of clubs, a commission of 40 per cent., so that on every $10 worth of stamps sold the club or person selling the stamps makes a revenue of $4."

Medical News

CALIFORNIA

Personal.—Dr. S. M. Augustine, San Rafael, has donated $2,000, bequeathed by the will of the late William Patton, toward the construction of a playground for school children of the city.——Dr. Pauline S. Nusbaumer has been appointed city bacteriologist of Oakland.

Offenders Against the Law.—Robert Thompson, San Francisco, said to have been convicted of murder in the second degree by the performance of a criminal operation on a young stenographer, was sentenced to twenty years' imprisonment in the San Quentin Penitentiary, November 19.——Julian MacRae, Los Angeles, is said to have pleaded guilty in the United States District Court, November 12, of the charge of unlawfully using the United States mail, and to have been fined $100.——Jose Benito, Oakland, charged with selling medicine not put up by a licensed pharmacist and manufacturing in violation of the state law, is said to have been found guilty in a justice court, November 17. The defendant claimed that the medicine which he was selling cured consumption, asthma, appendicitis, and every other ailment.

ILLINOIS

Assessed for Hospital Expense.—The board of managers of the Whiteside Public Hospital, Sterling, at its meeting November 1, is said to have assessed the eight practitioners who form the corporation, $50 each, to apply on the expenses of the institution.

Personal.—Dr. Charles M. Noble, Bloomington, who was painfully injured in a machinery accident in Sunflower, Miss., has been brought to St. Joseph's Hospital, Bloomington, and is reported improving.——Dr. Frank L. Clemens has been appointed a member of the medical staff of Graham Hospital, Canton, vice Dr. D. Dennison Kirby, resigned.——Dr. Titus P. Yerkes, Upper Alton, has gone to Rochester, Minn., for a surgical operation.

Small-Pox in the State.—Four cases of small-pox are reported in Anna. The schools have been closed and church services and other public gatherings have been interdicted for a few days.——A case of small-pox was found at a cheap lodging house in Chicago, November 14. The 800 lodgers were vaccinated, the hotel was ordered under quarantine, and the patient was removed to the isolation hospital.——Two cases of small-pox were reported in Peoria, November 17, the first to occur in that city for several months.

Chicago

Poses as Physician.—Louis Jappe was fined $100 in Judge Scovel's court, November 17, for practicing medicine without a license. The defendant is said to have claimed to be able to cure epilepsy in three treatments.

Physicians Aid Strikers.—At a special meeting of the West Side Physicians' Club, Dr. Benjamin H. Breakstone suggested that all members of the club furnish medical aid without cost to any striking garment worker applying for assistance. Sixteen members of the club volunteered their services.

Hospital Closes.—After a continuous existence of more than twenty years the Chicago Charity Hospital, 2407 Dearborn Street, has been forced to close its doors because of lack of support. The twenty-seven patients were removed to their homes or other hospitals November 18. Wesley Hospital has purchased the building and grounds.

Personal.—Dr. William E. Morgan, who was operated on for appendicitis at Mercy Hospital, November 25, is reported to be going on well toward recovery.——Dr. and Mrs. Isaac K. Abt have returned from abroad where Dr. Abt has been making a study of hospital construction, with especial reference to hospitals for children.——Dr. Alice Conklin suffered $3,000 loss in a fire which almost destroyed the apartment building in which she resided, November 18.

Health League Formed.—The Citizens' Health Alliance was organized at Hull House, November 27. The main purpose of the alliance is said to be the improvement of markets, improvement of hygienic conditions in schools, the eradication of insanitary conditions in tenements, the improvement of home conditions of school children, the creation of a public sanitary conscience, and the passage of a new ordinance and laws gov-

erning the sanitary conditions. The following officers were elected: president, Dr. Hyman Cohen; vice-president, Miss Jane Addams, Alderman A. W. Fulton, and Rev. Jenkins Lloyd Jones; secretary, Mr. G. A. Graves, and treasurer, Miss L. C. Rose.

Hospital Notes.—The Union Park Hospital has been incorporated with capital stock of $100,000. The building will be erected on Washington Boulevard west of Union Park, will accommodate seventy-five patients, will be ready for occupancy in a year, and will be under the charge of Dr. Charles C. O'Byrne.——An $80,000 addition to the Norwegian Deaconess' Home and Hospital was formally dedicated November 20. The building is 120 feet long, 50 feet wide, and 4 stories and basement in height, and is to be used as a hospital and deaconess' home. With the old building, the institution now has accommodation for 100 patients and fifty deaconesses. ——Health Commissioner Evans has asked the finance committee of the city council to set aside $1,500 for furnishing the Iroquois Memorial Hospital, the cornerstone of which was laid several weeks ago, and which is now fast nearing completion.——A meeting was held at the Bethel African Methodist Episcopal Church, November 13, to further plans for the establishment of a home for the prevention, cure and treatment of tuberculosis, to be called the Paul Laurence Dunbar Sanatorium. The board of directors consists of Dr. Anna R. Cooper, president; Mrs. L. Waller, secretary; Mrs. F. Turner, treasurer, and Rev. D. P. Roberts.——Plans are under way for the establishment of a day-and-night clinic for tuberculosis patients in connection with the dispensary system of the Municipal Tuberculosis Sanatorium. It is expected that the new sanatorium will be located in the Iroquois Memorial Hospital.

INDIANA

Public Gatherings Interdicted.—As there have been more than 50 cases of diphtheria in Linton during the last two weeks, the city board of health has issued orders that all churches, public schools, moving-picture shows, skating rinks, theaters, pool rooms and billiard halls, and other places where crowds gather be closed.

Appoints Board.—The governor has appointed the following board of trustees for the State Tuberculosis Hospital recently built near Rockville: Dr. Henry Moore, Indianapolis, Dr. Oliver V. Schuman, Columbia City, and Mr. Isaac Strouse, Rockville. The hospital is ready for occupancy but no funds are available for its maintenance.

Personal.—At a recent election in Indianapolis, Dr. Charles O. Durham was elected coroner and appointed the following deputies: Drs. Ralph S. Chappell and M. Cortez Leeth.——Dr. Charles W. Stolzel, for several years in practice at Springhill, Tenn., has returned to Indianapolis.——Dr. Louis A. Bolling, Attica, has become medical director of Mudlavia, Kramer, Ind.

First-Aid Outfit in Patrol Boxes.—Dr. Jewett V. Reed, superintendent of the Indianapolis City Dispensary, has suggested that each patrol box in the city be equipped with a tourniquet and a first-aid package. Many people who suffer from accidents on the streets, have had to wait for the arrival of the ambulance, and by this method the police might apply first-aid dressings at once.

Advertise Tuberculosis Clinics.—A new method for the advertising of the benefits of free tuberculosis clinics will be inaugurated in Indianapolis, December 15. A meeting will be held in Tomilson Hall at which Ex-Mayor Charles A. Bookwalter will preside and which will be addressed by Dr. Charles O. Probst, Columbus, Secretary of the Ohio State Board of Health. Invitations will be issued only to employers and their employees, the object being to show the employers that from a purely business standpoint, cooperation with a clinic will more than repay them.

Recommendations to Legislature.—At a special meeting of the State Board of Health, November 26, the following recommendations to the next legislature were decided on: medical inspection of school children; regulation of building of schoolhouses and providing that every schoolhouse built hereafter must be approved by the State Board of Health and must be sanitary in every particular; additional legislation governing the pollution of streams; additional legislation protecting the water supplies in the state; additional legislation governing the construction of sewers, and lodging in the State Board of Health the supervision of sewer construction so as to guarantee scientific sewerage systems; the enactment of legislation tending to reduce blindness by compelling physicians and midwives to give proper attention to the eyes of children immediately after birth; legislation to control hydrophobia by placing an additional tax on dogs with which to raise and maintain a Pasteur institute for the free treatment of victims of rabid dogs; giving the inspectors of the state pure food and drug department authority to inspect weights and measures and to file affidavits for maintaining false weights and measures and making it incumbent on prosecuting attorneys to prosecute; amending the pure food law so as to make it possible by insertion of the word "himself" to prosecute the owners of dairies and creameries who are found to be adulterating milk and milk products, and amending the pure food law so as to prevent the traffic in decayed eggs by the insertion of the word "knowingly."

Pure Drugs.—The Indiana Physicians' Pure Drug Association, was formed in Indianapolis, November 20, and the following officers were elected: Dr. Edmund D. Clark, president; Dr. Charles E. Cottingham, secretary-treasurer, and Dr. Frank M. Morrison, Dr. Frederic C. Heath, Dr. Thomas C. Kennedy and Dr. G. H. Roberts, vice-presidents, all of Indianapolis. The objects of this organization are to enforce the state and national pure drug laws as well as to secure better. The reports from the state laboratory show that during the year ended last September, 444 samples of drugs were analyzed. Of these 242 were legal and 202 below the standard. Out of ninety-two samples of spirits of camphor twenty-eight were found to be legal, and 64 illegal. Out of seventy-two samples of tincture of iodin only twenty-six were found to be legal, while forty-six were illegal. In tincture of iron seventeen were legal, and sixteen illegal. In fluid extract of belladonna six samples were legal and seven illegal. When the physicians of Attica received this report they agreed to refuse to buy supplies, even full strength drugs, from those houses shown by these bulletins to be guilty of making any weak drugs. This attitude is characteristic of medical men throughout the state. They refuse to take any chances, and say it is impossible to protect their patients unless the drugs used are pure and full strength. Four of the pharmaceutical manufacturers in the state have been prosecuted for violations of the pure drug laws, but the fines and court costs have not been over $22 in any case. This absurd sum is only a small part of the profit that can be made on the sale of a single barrel of below-standard drugs.

KENTUCKY

New Rule for City Hospital.—At a meeting of the staff physicians of Louisville City Hospital, which was held November 17, over which Dr. Joseph B. Marvin presided and at which Dr. Henry Enos Tuley acted as secretary, a set of rules was adopted governing the physicians and interns of the hospital.

County Society Meeting.—The Hardin County Medical Society held its annual meeting in Elizabethtown, November 10, and elected the following officers: president, Dr. D. Elmo McClure, Sonora; vice-president, Dr. John R. Cowherd, Vine Grove; secretary, Dr. John M. English, Elizabethtown, and delegate to the state medical association, Dr. James C. Mobley, Elizabethtown.

Sanatorium Needs New Buildings.—For the purpose of erecting the necessary buildings for curable cases of tuberculosis and an infirmary for advanced cases, and to pay off the debt incurred before the opening of the institution, the trustees of the Louisville Antituberculosis Association Sanatorium have begun a campaign to secure subscriptions for the $26,000 needed for these purposes.

Meeting of Eastern Kentucky Physicians.—The Eastern Kentucky Medical Association held its annual meeting in Winchester, November 16, and selected Richmond as the place of next meeting. The following officers were elected: president, Dr. J. H. Schultz, Jeffersontown; vice-president, Dr. John P. Huff, Plummer's Landing; Secretary, Dr. Thomas A. E. Evans, Farmers, and treasurer, Dr. William M. Price, Dabney.

Dinner to Dr. Bodine.—Dr. James Morrison Bodine, president of the medical faculty of the University of Louisville,

and for forty-one successive years its dean, has been tendered a testimonial dinner to be given at the Seelbach Hotel, Louisville, December 16, to which his pupils and friends throughout the country are invited. Dr. Isadore N. Bloom, Atherton Building, Louisville, is chairman of the committee which has the dinner in charge.

Louisville

Bakeries Inspected.—All of the bakeries in Louisville have been inspected twice by the Pure Food and Drug Division of the Kentucky Experiment Station and the results of the inspection reported to each bakery. All bakers who were heavily scored were given a personal hearing by Mr. R. M. Allen, chief of the division. Of the 150 bakeries which were inspected, thirteen had not made a substantial attempt to comply with the law as found on the third inspection, and prosecutions resulted. Twelve pleaded guilty and one was tried, found guilty, and sentenced to pay a fine of $50 and to imprisonment for ten days in jail. The individual sentenced is said to have conducted his plant in a very filthy cellar, and to have used such ingredients as imitation jellies and anilin egg color substitute. The rest of the bakers are reported as having made most substantial progress in complying with the regulations of the department.

Pure Drug Prosecutions.—The Kentucky Experiment Station, through the head of the Pure Food and Drug Division, R. M. Allen, has brought a number of prosecutions in magistrates' courts in Louisville and has obtained convictions and fines against druggists for selling products below the standard prescribed by the United States Pharmacopeia. The principal products examined and found deficient are as follows: tincture of iodin, seven cases, varying from 47 per cent. to 84 per cent. of the required strength and from containing no potassium iodid to 43 per cent. of the required strength and one sample with undissolved potassium iodid; acetic acid, 76 per cent. of the required strength; tincture of opium, 12.8 per cent. of the required strength; camphor liniment, seven cases, varying from 14 per cent. to 58 per cent. in strength, one sample containing paraffin oil; lime water, being 27 per cent. of the required strength; and precipitated sulphur, 40 per cent. In Covington and Newport other cases are being reported for prosecution; most of them of similar nature with the exception of a firm prosecuted for selling witch hazel containing wood alcohol and a case of another firm for selling zinc oxid containing 90 per cent. of silica. Glycerin, sweet spirits of nitre, collodion, alcohol, citric acid, and tartaric acid are still under consideration because of questions with respect to deterioration or manufacture. The department is trying to determine in each case of a deteriorated product whether it is due to the fault of the manufacturer, the wholesaler, or the dealer, and the division is making an attempt to educate the Kentucky trade with respect to the proper preservation of perishable drug products.

LOUISIANA

Room for More Tuberculosis Patients.—The Louisiana Antituberculosis League announces that there is room in Camp Hygeia for ten more patients in the first stages of tuberculosis.

Sentenced to Life Imprisonment.—Dr. Emmett C. McKowen, Jackson, convicted of the murder of E. K. Judson, New Orleans, an inmate of the State Insane Hospital, Jackson, is said to have been taken to the penitentiary to begin serving his sentence of life imprisonment.

State Health Train.—The health exhibit train, to which THE JOURNAL recently referred, is making a tour of the state. Great interest is manifested in the exhibit and in the lectures delivered at the towns at which it stops. The chief subjects dealt with by the lecturers who accompany the train are "Pure Food," "Tuberculosis and Its Prevention," and "Sanitation." The train is equipped with complete anatomic and pathologic exhibits supplied by the Medical Department of Tulane University, the Souchon Museum of Anatomy and the federal and state governments.

Personal.—Dr. John L. Scales, formerly of Alden Bridge, has returned after eighteen months in London and Vienna, spent in special work on diseases of the eye, ear, nose and throat, and associated himself with Dr. Oscar Dowling, Shreveport.—Dr. Gustav Mann, professor of physiology in Tulane University, who sustained serious injury to the head in an accident due to the breaking of a centrifuge in his laboratory October 31, has recovered.——Dr. William J. Headrick, Logansport, is reported to be critically ill.——Dr. Sidney D. Porter, Moreauville, has been placed in charge of the Hookworm Commission of Louisiana.

MARYLAND

Typhoid Fever.—No new cases of typhoid fever have developed among the cadets at the Naval Academy for several days, and it is believed the epidemic is at an end; 23 cases were reported.——During the week ended November 26, sixty cases of typhoid fever were reported in Baltimore with 13 deaths. Of these forty were in the eastern portion of the city and seven are reported in one family.

Society Meeting.—At the annual meeting of the Queen Anne County Medical Society, at Centreville, November 18, the following officers were elected: president, Dr. James W. Stack, Wye Mills; vice-president, Dr. Rowland H. Ford, Queenstown, secretary-treasurer, Dr. H. F. McPherson, Centreville; delegate to the Medical and Chirurgical Faculty of Maryland, Dr. Norman S. Dudley, Church Hill; and alternate, Dr. William G. Coppage, Church Hill.

Personal.—Dr. John E. O'Neill has been appointed assistant superintendent of the State Tuberculosis Sanatorium, vice Dr. E. W. Glidden, resigned to become superintendent of the Georgia Sanatorium. Dr. Glidden was presented with a gold watch by the patients before leaving.——Dr. Robert T. Winterode, pathologist of the State Hospital for the Insane, Catonsville, has resigned to accept the position of superintendent of the State Hospital for Colored Insane.

MISSOURI

St. Louis

In Memory of Dr. Baumgarten.—The Alumni Association of the Medical Department of Washington University has appointed a committee to raise funds for the erection of a memorial tablet of the late Dr. Gustav Baumgarten, to be placed in the Medical Library Building beside those in memory of Dr. Gregory and Boisliniere.

New Contagious Disease Hospital.—The hospital board, on November 16, appointed a committee to investigate and report plans for the new contagious disease hospital to be located on ground owned by the city between the Municipal Sanatorium and the City Infirmary. Authority has been given to equip the Female Hospital buildings as a temporary contagious disease hospital.

New Hospital.—The Sisters of St. Joseph's Convent of Mercy applied on November 21, for a building permit to erect a hospital and convent to cost $350,000 to be known as St. John's Hospital, on a plat of ground recently acquired, bounded by Audubon Ave., Kingshighway, Parkview and Euclid Avenues. The proposed hospital will be a U-shaped, five-story building which will accommodate 250 patients.

Changes in Hospital Staff.—Dr. Meyer Wiener has been added to the staff of the ophthalmologic department of the City Hospital, and Dr. Alexander E. Horwitz to the department of deformities.——Drs. Martin F. Engman and William H. Mook have resigned from the department of deformities and syphilology.——The medical staff, at its meeting for organization, elected Dr. George C. Crandall, president, and Dr. Hanau W. Loeb, secretary, and directed the formation of an executive committee composed of the chairman of each of the twelve departments of the staff.

NEW JERSEY

Gifts to Preventorium.—The Tuberculosis Preventorium for Children, which was removed from Lakewood, N. J., to Farmingdale last April, has received from the estate of Arthur Brisbane 64 acres of land and a free lease for twenty-five years of the Windsor stock farm comprising 240 acres under cultivation. Nathan Straus has contributed $50,000 toward buildings to be constructed on the farm, and the board of health auxiliary connected with the Association of Tuberculosis Clinics has subscribed $4,500 to build an open shack for which it will select the children. The preventorium will require $50,000 more for buildings and additional memberships of $85,000.

NEW YORK

Prizes for Selling Tuberculosis Seals.—The Committee on the Prevention of Tuberculosis of the State Charities Aid Association offers prizes valued at $5,250 to be divided among cities and villages selling the largest number of Red Cross Christmas Seals per capita of school registration before January next.

New County Sanatorium.—Application was made to the Department of Health, November 3, by the Metropolitan Insurance Company for a hearing on its application to build a sanatorium to cost $100,000 for employees afflicted with tuberculosis. The company desires to build the hospital on Mount McGregor at Moreau, Saratoga County.

Appropriation for Health.—The state has appropriated to guard against sickness in the interior of the state, $180,680; for the suppression of epidemics, $7,500; for tuberculosis exhibits, $10,000; for ophthalmia neonatorum, $5,000; for the cancer laboratory, $39,000; for investigations, $10,000; for the antitoxin laboratory, $1,800; for the hygienic laboratory, $14,000. An appropriation of $242,550 has also been made for the health officer of the port of New York.

Ban on Common Drinking Cup.—The State Department of Health is seeking the cooperation of various railroads operating in this state in abolishing the common drinking cup from trains and railroad stations. They have issued a statement pointing out the dangers of this practice and showing that there is no use for its continuance when a cup can be procured from a "penny in the slot machine." They also show that the same dangers accompany the common towel; in fact, that the common towel may be even more dangerous than the common drinking cup.

Practical Instruction of Health Officers.—The State Department of Health announces a new practical course of instruction open to sanitary officers, local health officers, at Albany, beginning December 7, and continuing for three days. The general subject of instruction at this conference will be water and sewage purification. There will be laboratory talks and demonstrations at the State Hygienic Laboratory, Albany, supplemented by inspections of the water filtration plants at Rensselaer and Albany and the sewage disposal systems at Ballston and Saratoga.

New York City

Samuel Alexander Dead.—As we go to press a notice is received of the death, on November 29, of Dr. Samuel Alexander of New York City, professor of clinical surgery in the Medical Department of Cornell University, aged 51.

Harvey Lecture.—The fourth lecture of the present course of Harvey Society Lectures will be given at the New York Academy of Medicine December 10 at 8:15 p. m. by Dr. Harvey Cushing of Johns Hopkins University on "Certain Clinical Aspects of Dyspituitarism."

Crusade on Smoking Autos.—The sanitary inspectors of the health department have the duty of watching for smoking automobiles, and since November 1 100 arrests have been made, and of this number about seventy have been convicted. The fines for the first eleven days of this month amounted to $127.

New Day-and-Night Tuberculosis Camp.—A new tuberculosis day-and-night camp was opened November 15, in the annex of the New York Throat, Nose and Lung Hospital, 233 East Fifty-Seventh Street. The night camp will be for incipient and moderately advanced cases, and the day camp for patients in all stages of the disease.

Two Deaths from Cholera.—The Italian liner, *San Giorgio*, which arrived from Naples and Palermo with 629 steerage passengers, was held at quarantine for five days. A woman and a child died during the voyage of cholera, the woman being buried a few miles off Sandy Hook. Another child supposed to have cholera was taken to Swinburne Island and bacteriologic examinations confirmed the suspicion.

Hospital to Move.—The New York Society for the Ruptured and Crippled has obtained permission to sell its property at Forty-Second Street and Lexington Avenue to the New York State Realty and Terminal Company for $1,350,000. The New York Central Railroad will get a portion of the property. It is the intention of the trustees to establish a new hospital in New York City and a branch hospital in the country.

Many Diseases on Liner.—The Cunard steamer *Carpathia* arrived November 18 from the Mediterranean with a variety of diseases on board. While there was no cholera, scarlet fever wrought harm to the children of the steerage, five having died and been buried at sea. An epidemic of measles also broke out, and there were thirty-four cases when the vessel arrived at quarantine. There were also two cases of erysipelas and one of typhoid fever.

Advisory Board of Statisticians.—The health commissioner has secured the assistance of Drs. Roger S. Tracy, William H. Guilfoy and Cressy L. Wilbur, Washington, D. C., as members of an advisory board of statisticians to the health department. Associated with these physicians are Prof. C. E. A. Winslow of the City College, and Prof. Walter L. Wilcox of Cornell University, the latter of whom is also consulting statistician to the State Board of Health.

For the Prevention of Insanity.—A special committee on mental hygiene has been appointed by the State Charities Aid Association, which will initiate a campaign for the prevention of insanity. The campaign will be conducted on lines similar to the crusade against tuberculosis. Among the members of the committee are Drs. M. Allen Starr, Charles L. Dana, Frederick Peterson, Bernard Sachs, Albert Warren Ferris, William Mabon and William L. Russell. Mr. Homer Folks is chairman of the committee.

Randall's Island Designs Approved.—Designs for the proposed plan of buildings on Randall's Island, at an estimated cost of $4,500,000, have received the preliminary approval of the Municipal Art Commission. Fifteen groups of cottages for the patients will be situated on the southern, southeastern and southwestern slopes of the island, surrounding on three sides the central school house and the general medical and surgical hospital. The isolation hospital for contagious diseases will be situated on the western shore.

New Clinic.—At a recent meeting of the faculty of the University and Bellevue Hospital Medical College it was stated that funds sufficient for equipment and the maintenance for one year of a clinic for minor surgical operations had been secured. The clinic will handle minor operations which cannot secure free treatment in the city hospitals and which few physicians' offices are equipped to handle. The department will offer students better opportunities for practical observation of methods of modern antiseptic surgery than is possible at more serious operations.

Plans of the Milk Committee.—The New York Milk Committee has obtained a certificate of incorporation which sets forth that the organization proposes to improve the milk supply of New York City and educate the public in the proper use of milk for infant feeding and other purposes. The committee will hold a conference December 2 and 3 for the purpose of discussing the most efficient ways of controlling the municipal milk supply. Physicians, sanitarians, research workers and representatives of the municipal, state and national health and agricultural departments have signified their intention of being present at this conference, and the public has been invited to attend.

Sanitary Code Violated.—Inspectors have reported that the sanitary code has been flagrantly violated all over the city, and Raymond B. Fosdick, commissioner of accounts, has undertaken an investigation. It has been found that breadstuffs are being baked under conditions of "unspeakable filth," and that sulphurous acid has been used in the manufacture of candy and to stay the decomposition of meat. Disgraceful conditions have been revealed in the chicken slaughter houses of the east side, and it is stated that these violations could not have occurred except through the inefficiency or venality of certain of the inspectors. Commissioner Fosdick has heard that large sums of money have been paid to politicians in order that certain interests might obtain permits from the Bureau of Food Inspection to the exclusion of other interests. The Bureau of Chemistry of the Department of Agriculture has, through Dr. Harvey W. Wiley, tendered the use of all the facilities of that office in the investigation to be carried on.

NORTH CAROLINA

Medical Legislators.—At the November election the following physicians were elected to office: congress, Dr. John M. Faison, Faison, Duplin County; state senate, Dr. Robert N. Cartwright, Fairfield; house of representatives, Drs. Alfred A. Kent, Lenoir; John H. Mease, Canton; Robert P. Floyd, Louisburg, and Mark B. Pitt, Tarboro.

Personal.—Dr. Julian E. Wood, Elizabeth City, is said to be critically ill with heart disease at his home.——The office of Dr. R. Vance Brawley, Salisbury, was entered by thieves recently and a number of valuable instruments and fixtures were stolen.——Dr. Henry T. Bahnson, Winston-Salem, has been elected honorary fellow of the Virginia State Medical Society.

OREGON

Personal.—Dr. Walter E. Carll, Oregon City, is a patient in St. Vincent's Hospital, Portland, suffering from a diphtheria infection of the eye.

New Professor of Physiology.—The University of Oregon, Department of Medicine, has secured the services of Dr. John Dice MacLaren of the University of Oklahoma, who will occupy the chair of physiology. It is stated that Dr. MacLaren will devote his entire time to teaching and research.

Sanatorium Opened.—After great delay the State Sanatorium for Tuberculosis opened to receive patients, November 21. There were thirty-seven applications received before the

opening of the institution. Thus far $30,000 has been spent in the erection of buildings and maintenance. The institution is located in the old State Mute School building near Salem.

PENNSYLVANIA

Hospital for Doylestown.—A gift of a large sum of money to establish a hospital in Doylestown was announced at a meeting of the Doylestown section of the County Medical Society on November 18. The source of the gift has not been made known and there are conditions requiring the citizens of the town to contribute an equal sum.

Personal.—Dr. William C. White, Pittsburg, has resigned the superintendency of Waverly and Hazelwood Antituberculosis Sanatoriums, Louisville.——The Westchester School Board has elected Dr. Jane R. Baker, Embreeville, examining physician of the school children.——Dr. Charles H. Brown has resigned as health officer of Franklin.——Dr. George Boehm, Arona, was thrown over an embankment 200 feet high in a runaway accident, recently, but fortunately was not seriously injured.——Dr. Morris P. Boyle, Glenside, is reported to be critically ill at Germantown Hospital, Philadelphia.

Philadelphia

Diphtheria Closes a School.—Owing to the illness of several pupils with diphtheria, the John Barry Public School was closed for fumigation on November 18.

To Enlarge Hospital.—Howard Hospital, at Broad and Catherine Streets, has purchased adjacent property on Catherine and Webster Streets for $9,866.66.

Free Clinic Opened.—The Jewish Consumptive Institute, Philadelphia, has opened a free clinic at 406 Wharton Street. The clinic is open every day after 12 o'clock.

Temporary Biologic Laboratory.—The Department of Health of Pennsylvania has leased the building at 2000 Arch Street for temporary use as a biologic laboratory.

Hospital Buys Two Lots.—The German Hospital has purchased the property at the southeast corner of Corinthian Avenue and Cambridge Street and the adjoining property on Corinthian Avenue, lot 40.9x84.9, for $8,000. Both lots are directly opposite the hospital.

Measles on Steamship.—Among the steerage passengers of the American liner *Merion*, which docked November 14, two women and eight children were found to be suffering with measles and were taken at once to the Philadelphia Hospital. The rest of the steerage passengers were discharged.

Epidemics Closed City Schools.—On account of scarlet fever and diphtheria, seven of the city's public schools were closed for fumigation, November 21, by order of the Board of Health. In all except one of these institutions at least two or three cases of contagious disease, scarlet fever or diphtheria were discovered.

Dr. Willard's Will.—Among the bequests included in the will of the late Dr. DeForrest Willard are the following: To the trustees of the University of Pennsylvania is left $300 for a free bed in the Children's Orthopedic Department. To the Union Benevolent Association is bequeathed $1,000 in trust, the income to be applied to the Gladys Willard baby fund. The Christian Association of the University of Pennsylvania receives $250 for settlement work, and the Presbyterian Hospital $1,000.

Officers Elected.—At the annual meeting of the Aid Association of the Philadelphia County Medical Society, the following officers were elected: president, Dr. Roland G. Curtin; vice-president, Dr. Jacob R. Shellenberger; secretary, Dr. Lewis H. Adler, Jr.; treasurer, Dr. John B. Turner; directors (for three years), Drs. Oscar H. Allis, John C. DaCosta and Richard A. Cleeman. In addition to these, new directors were chosen to fill the places of the late Drs. DeForest Willard and James B. Walker. These were Drs. Samuel D. Risley and William S. Wray.

Ovation for Dr. Smith.—Edgar Fahs Smith, M.D., vice-provost of the University of Pennsylvania and professor of chemistry in the same institution, was elected provost to succeed Charles C. Harrison, at a special meeting of the Board of Trustees, November 15. When this fact became known to the students, every one, no matter what his department, left his classroom and for the first time in years all the students assembled in one vast throng. They made their way to the Harrison Chemical Laboratory to show to Dr. Smith their great rejoicing over his election. Many had been named to fill Dr. Harrison's place, but Dr. Smith was the choice of faculty, alumni and students.

New Hospital Recommended.—At a conference of the State Board of Charities with state officials and the heads of the state insane hospitals in the central district, it was decided to recommend state provision for an institution for the care of the tuberculous insane. The superintendent strongly urged that some provision for such persons be made, owing to the necessity of isolating tuberculous patients. The State Commissioner of Health supported the plan and, on his recommendation, the board decided to include provision for a building and grounds similar to the state tuberculosis sanatoriums. The cost will be from $100,000 to $150,000 and state property adjacent to one of the state hospitals will be chosen.

Personal.—Dr. Charles K. Mills, professor of neurology, and Dr. William G. Spiller, professor of neuro-pathology at the University of Pennsylvania, have been notified of their election as corresponding members of the Gesellschaft der Deutschen Nerven Artzen.——Dr. Charles W. Burr has been elected physician to the Orthopedic Hospital and Infirmary for Nervous Diseases, vice Dr. Wharton Sinkler, deceased. The three chiefs of clinics now are Drs. Morris J. Lewis, John K. Mitchell and Charles W. Burr, with Dr. S. Weir Mitchell as chief emeritus.——Dr. Maurice Ostheimer has been elected physician to the medical dispensary of the Children's Hospital, vice Dr. J. Claxton Gittings, resigned, to accept the position of physician to the Children's Hospital.

WISCONSIN

New Dispensary.—The Milwaukee Maternity Hospital and Free Dispensary Association opened its south side free dispensary for the sick poor, 391 Mitchell Street, November 16. A benefit for the dispensary was given at the Majestic Theater, November 22.

Found Guilty.—Fletcher P. Riley, charged with using obscene medical advertising in newspapers, is said to have been found guilty October 28, on five separate charges and fined $25 and costs in each case. His assistant, Benjamin W. Kinsey, is said to have pleaded guilty and to have been fined $50 on each count.

Bubbling Fountains.—The Health Commissioner of Milwaukee has asked that two bubbling fountains be placed at each entrance or inside the lobby of the Auditorium Building for the accommodation of patrons.——Two bubbling fountains were installed on West Water Street in Grand Avenue by the health department recently.

Public Health League Organized.—At a meeting of the people of Kenosha, October 25, plans were completed for the incorporation of the Kenosha Antituberculosis and Public Health League, a reorganization of the Kenosha Antituberculosis Committee. The new organization will be in close affiliation with the state and national organizations.

Personal.—Drs. George J. Jurss, Arthur R. F. Grob and Gustave A. Hipke have been appointed trustees of the Emergency Hospital, Milwaukee.——Dr. George R. McManus, health officer of Stoughton, is reported to be seriously ill with septicemia.——Dr. Frank E. Darling has been appointed assistant health commissioner of Milwaukee, vice Dr. Louis F. Jermain, who, on his return from Europe recently, resigned.——Dr. Richard J. Fleischer, Milwaukee, was seriously injured in a street car collision recently.——Dr. Christian Bergh and family, Whitehall, have returned from Norway.——Dr. Edward W. Quick, Appleton, has removed to Greenbay, where he will be chief of staff of St. Vincent's Hospital.

GENERAL NEWS

New Publishers for Journal.—The Rebman Company, New York City, announces that at the beginning of the year, it will take over the publication of the *Journal of Cutaneous Diseases*.

Meeting of Hawaiian Society.—The annual meeting of the Hawaiian Territory Medical Society was held in Honolulu, October 29-31, and the following officers were elected: president, Dr. W. G. Rogers; vice-president, Dr. W. D. Baldwin; secretary-treasurer, Dr. William C. Hobdy; and executive committee, Drs. St. David G. Waters and Clifford B. Wood, all of Honolulu.

Museum of Safety.—The American Museum of Safety, whose object is the conservation of human life, was formally opened at the United Engineering Society Building, 29 West Thirty-Ninth Street, New York City, November 21. The organization proposes to erect a museum of safety and sanitation which will be a clearing house for every worthy device and every worthy thought for safety.

Soo Line Surgeons Hold Meeting.—The fourth annual meeting of the Minneapolis, St. Paul and Sault Ste. Marie Surgical Association was held in St. Paul, November 16 and 17, under the presidency of Dr. Justus Ohage, St. Paul. The following officers were elected: president, Dr. Albert E. Halstead, Chicago; vice-president, Dr. Charles F. McComb, Duluth, Minn.; and secretary-treasurer, Dr. John H. Rishmiller, Minneapolis, Minn. The next meeting will be held in Chicago.

Personal.—Dr. Kenneth W. Millican, formerly a member of the editorial staff of THE JOURNAL, sailed, November 4, for England on invitation of the *Lancet* to take a position on its editorial staff.——Dr. Samuel T. Darling of the Ancon (C. Z.) Hospital Laboratory and J. J. McGuigan of the Panama Health Office, left, October 24, to investigate the report as to small-pox in the Province of Los Santos.——Dr. H. J. Howard, formerly of Rochester, N. Y., has been appointed chief of the ophthalmological staff of the University of Pennsylvania Medical School and Hospital, Canton, China, and will sail for his new post of duty December 13.

Tri-State Physicians Meet.—The Tri-State Medical Society of Arkansas, Texas and Louisiana held its annual meeting in Shreveport, La., November 15 and 16, under the presidency of Dr. Robert H. T. Mann, Texarkana. The following officers were elected: president, Dr. Thomas P. Lloyd, Shreveport, La.; vice-presidents, Drs. Edward H. Martin, Hot Springs, for Arkansas; Thomas J. Allison, Gladewater, for Texas, and Robert H. Blackman, Monroe, for Louisiana; councilors, Drs. Robert F. Kittrell, Texarkana, for Arkansas; Clarence M. Tucker, Haughton, for Louisiana, and Samuel F. Vaughan, Jonesville, for Texas, and secretary-treasurer, Dr. Jacob M. Bodenheimer, Shreveport, La. (reelected).

Nu Sigma Nu Convention.—The sixteenth biennial convention of the Grand Chapter of the Nu Sigma Nu Medical Fraternity was held in Cleveland November 25 and 26. Applications for charters were received from students in the medical departments of Wisconsin University and of Tufts College; both were refused. The following officers were elected for the ensuing two years: Dr. Torald Sollmann, Western Reserve, to succeed Dr. William H. Welch as honorary president; Dr. Frank F. Wesbrook, University of Minnesota, as honorary vice-president; Dr. R. Burton Opitz, Columbia University, honorary secretary; Dr. Harold A. Miller, Pittsburg, honorary treasurer, and Dr. William H. Parks, New York, honorary historian. The acting executive officers elected were Dr. Henry J. Prentiss, Iowa University, president; Dr. Ernest E. Irons, Rush Medical College, secretary and treasurer, and Dr. Henry W. Stiles, Syracuse University, grand custodian.

FOREIGN NEWS

Personal.—Dr. A. Pulido, member of the Spanish parliament and one of the editors of the *Siglo Medico*, recently received the decoration of the grand cross of the order del Merito Militar and at the same time was presented with an album containing the autographs of all the army professors as a token of gratitude for his efforts in and outside of the legislature to improve the medical service in the army and enhance its prestige.

Ehrlich's "606" and the Italian Dermatologists.—At the annual meeting of the Associazione dei Dermatologi Italiani resolutions were adopted in regard to Ehrlich's new remedy for syphilis, calling attention to the harm that may result from the way in which it has been advertised and warning the public against interested exaggeration of its therapeutic efficacy. Physicians are urged not to charge exorbitantly for injections of the new drug when it is put on the market, as some are said to have done already.

The Pirogoff Centennial.—The profession in Russia celebrated in various ways, November 26, the hundredth anniversary of the birth of Nicolai Pirogoff, the great Russian surgeon, chief of the military medical service during the Crimean and the Russo-Turkish wars, and long professor of surgery at the Military Academy. His first work, published in 1836, on the anatomy of arteries and fascia not only gave him an international reputation but blazed the way for the surgery of the future. The national medical association of Russia has for its official title, the "Society in Honor of the Memory of Pirogoff."

Deaths in the Profession Abroad.—In addition to the deaths mentioned by our foreign correspondents, the profession has lost Dr. R. U. Krönlein, until the last few months professor of surgery at Zurich, Switzerland, and a frequent contributor to surgical literature, aged 63. The twenty-fifth anniversary of his connection with the Zurich faculty was celebrated by his friends in 1906.——From Buenos Aires is reported the death of two members of the medical faculty of the university, Drs. O. Hernandez and R. H. Vegas, professors of pathology and surgery, respectively.——Dr. A. Hauser, of Teplitz, the leading spirit in the successful organization of the profession in Bohemia in recent years and in numerous lines of preventive medicine and in determining the therapeutic radioactivity of the mineral springs of Bohemia, died suddenly at Teplitz, recently, aged 39. He was one of the first to emphasize the necessity for a press committee as a powerful means to further the interests of the organized profession.——S. Mayer, professor of histology at the German University of Prague.——Dr. E. Below of Hannover, well known as a literary writer, especially on America, where he had long resided, died October 31, aged 65.——Dr. Lombe Atthill, University of Dublin, formerly president of the Royal College of Physicians, Ireland, vice-president of the Dublin Obstetric Society from 1900 to 1903, president of the Royal Academy of Medicine in Ireland, whose work entitled "Lectures on Diseases Peculiar to Women," is well known and ran through many editions, died at Stroud, Kent, September 14, from heart disease, aged 82.——Dr. John Anderson, F.R.C.P., for many years an officer in the Royal Army, Medical Corps, and later a specialist in tropical medicine and a general consulting physician, died at his home in London, October 10, from cerebral hemorrhage, aged 70.——Dr. Sidney Ringer, consulting physician to University College Hospital and Holme professor of clinical medicine in University College, London; the author of "Handbook of Therapeutics"; a clinician and pharmacologist of great repute, died at his country residence in Yorkshire, October 14, aged 75.

MANILA LETTER

(From Our Regular Correspondent)

MANILA, Oct. 21, 1910.

New Water-System for Manila

The new water-system for Manila has been inaugurated and accepted by the municipal board. This insures not only more but also vastly better water for Manila's inhabitants. The main reservoir back of the dam, which has a capacity of 500,000,000 gallons, is fed by the waters of the Mariquina River which rises high in the mountains of Central Luzon. For several years the water-supply of Manila has been inadequate and not altogether free from pollution. The protection of the city's new water-supply is guaranteed by the Mariquina reservation water-shed near Bosoboso, where a great area, more than 100 square miles in extent, is a safeguard against pollution of the water flowing into the Montalbon reservoir. This area is absolutely uninhabited; it is owned by the city and no one will be allowed to settle there. No filtration plant is included in the present system, nor is any planned for the immediate future, partly because of lack of funds, and partly because up to the present sanitary engineers have not devised a filtration plant which will deliver water free of amebas to the mains. The amebas, although much larger than many micro-organisms which are taken out by filtration plants, seem to pass readily through each of the various types of filters. As the contamination of the present water-supply is mostly that of amebas, the city is content to let the filtration plant rest till further successful experiments have been made along this line.

Almost No Cholera in Manila

The cholera situation in Manila at present has only one lamentable aspect. The physician from the Bureau of Science who has been carrying on investigations on cholera at the San Lazaro Hospital for infectious diseases is rather disappointed that the number of cases for the past few weeks has not been sufficient even for purposes of investigation. While southern Europe is suffering and excited over epidemics of cholera, Manila, with whose name cholera has so long been closely associated, goes for one, two, three or more weeks without seeing a case; this, too, right in the midst of the rainy season. The director of the Bureau of Health says that the quarter ending Sept. 30, 1910, has been perhaps the most satisfactory from the standpoint of the occurrence of infectious diseases, of any quarter since American occupation. Similar encouraging reports in regard to cholera also have been received from the provinces.

The Philippine Islands Association for the Study and Prevention of Tuberculosis

Through the influence of the Philippine Islands Association for the Study and Prevention of Tuberculosis school children are taught how tuberculosis spreads, its effects, and the per-

sonal sanitary precautions necessary to avoid the disease in the Philippine Islands. Popular lectures on tuberculosis have been given at the churches and at some of the clubs. The police stations, the schoolhouses and other municipal buildings have been used as places for instructing the native how to care for himself. These public "clinics" are to be held from time to time in all parts of the city. The director of health has declared tuberculosis a dangerous communicable disease which thus becomes reportable according to the sanitary code of Manila. The people of Manila have been liberal in subscribing funds and commodities to carry on the work of the society, and these subscriptions have enabled it to open up a simple fresh-air sanitarium at the edge of town for treatment and the isolation of advanced cases.

New Medical Journal

A new monthly medical journal, the *Revista de Medicina y Farmacia*, has begun publication in Manila. This journal is in Spanish and is the official organ of the Colegio Medico-Farmaceutico de Filipinas and to a greater or less degree of that portion of the medical profession in Manila who do not speak English.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Nov. 19, 1910.

The Falling Birth-Rate

In the quarter ending September the births in England and Wales were in the proportion of 24.9 annually per thousand of the population. This is the lowest birth-rate recorded in any third quarter since the establishment of civil registration. The deaths were in the proportion of 11.4 annually per thousand persons living, which is the lowest death-rate recorded.

The Institute of Hygiene

The Incorporated Institute of Hygiene is a peculiar and very useful body to which there is probably no parallel in other countries. Like many other institutions in this country, where so much is left to private initiative that is done by the government in other countries, it discharges important public functions. The governing body consists of some of the most eminent physicians in the country. There is a council of over fifty which devotes itself chiefly to awakening interest and spreading knowledge in regard to hygiene. The feeding and rearing of children, the responsibilities of motherhood, the hygiene of the home, food and dietetics, cooking, physical training and home nursing are some of the subjects comprised. Many lectures by authorities on these subjects are arranged by the institute. Examinations are organized and held periodically in every large center in the United Kingdom and many young women and men enter as candidates to secure the certificate of the institute. Many of these candidates are school teachers, who will use their knowledge in teaching. Museums, too, have been established as centers of information in regard to foods, beverages, clothing and domestic hygiene. Perhaps the most valuable work done by the institute is that of maintaining and raising the standard of purity and quality of food. The means are very simple. The maker is invited to submit his product for examination; samples are received and are also bought in the open market. These are analyzed in the laboratory. A report is drawn up and comes before an examining board which sits every month and is composed of members who have attained distinction in analytical work. The claims made for the article are considered. Those articles which are found to be pure and up to the standard of their claims are granted the certificate of the institute. This is issued for only one year and a condition of its renewal is that the purity and standard of the article must be maintained. As the results of the analysis are registered at the laboratory a strict watch is kept on the articles certified. The greater part of the funds of the institution have been contributed by the members of the council but an appeal is now being made to the public for funds to extend the work to all the large centers of population.

The Epizootic of Rat Plague

The systematic destruction of rats in the plague-infected districts of Suffolk, described in my last letter [November 26, p. 1903], has been carried out with most effective results in the last fortnight. Men employed for the purpose of destruction are making house-to-house visitations to inquire if there are any rats on the premises and to offer to destroy them. Persons who are believed to have an unusual number of rats or mice on their premises are receiving notices from the sanitary inspectors requesting them to take measures for the abatement of the nuisance. The government has conferred on the local authorities special powers for the destruction of rats in districts where plague is present or suspected or in which there is an unusual mortality among rats. A memorandum on plague describing its early symptoms and means of prevention has also been issued. As it is now nearly two months since the four cases of plague in man, recorded in previous letters to THE JOURNAL, have occurred and no suspicious cases have followed, the danger of an epidemic of the disease is considered slight. The danger of plague attacking Europeans is emphasized in a letter to the *Lancet* by Professor W. J. Simpson, a well-known authority on tropical diseases, who has been sent by the government to the tropics to inquire into several epidemics of plague and other diseases. In the outbreak of plague at Capetown, South Africa, a comparatively small town, he found that the cases were distributed as follows: Europeans, 164, colored (Asiatics, etc.) 342, and natives 133. Rats died a considerable time before the outbreak, but their connection with human plague was accepted only in a half-hearted manner and proper precautions were taken only late in the outbreak.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Nov. 11, 1910.

Arsenobenzol (606) at the Society of Dermatology

The Société de dermatologie devoted its November session almost exclusively to the study of (1) the efficacy of "606," and (2) the technic of the injections. Professor Bayet, of Brussels, reported results in 100 cases (he treated 175, but the last seventy-five had not been observed long enough to justify a report). Bayet used Wechselmann's procedure with injections in the interscapular region. These injections often caused troublesome local consequences, persistent infiltrations, even gangrenes, one of which lasted six months without cicatrizing. The general effects were not serious: a little fever and kind of arsenical rheumatism, sometimes erythemas. Bayet found arsenobenzol efficacious, especially in certain cases; it is perhaps, he thinks, a more active remedy than mercury. On the other hand, it fails to act in certain cases of primary and secondary syphilis, offers no guarantee against recurrences, which are frequent, and has scarcely any effect on the Wassermann reaction.

Dr. Brocq, physician of the St. Louis Hospital, reported results which he obtained in the treatment of twenty syphilities for a month by Ehrlich's method, which he compared with results from the old methods of treatment. Brocq thinks that the mercurial treatment has changed somewhat within ten years. Gray oil, which on account of the facility with which it can be employed has come into general use, is an unreliable remedy apart from its danger. Little by little syphilologists who employ it almost exclusively have become accustomed to obtaining only imperfect results; hence their admiration for the results given by "606." But mercury should be in the form of calomel or injections of the soluble salts, or even of Van Swieten's solution taken internally and associated with iodids, to be fairly compared with "606." One almost never sees a case really intractable to mercury in these forms. Some have asserted the superiority of arsenobenzol over mercury because in certain cases an injection of arsenobenzol has had a beneficial effect on conditions which prolonged mercurial treatment would not cure; but in such cases arsenobenzol has had only the effect of arsenic administered in the old forms, such as tonics and sulphurous waters, which after long mercurial treatment often bring about a cure of hitherto refractory conditions. One can, therefore, judge of the action of the drug only in entirely untreated cases, in which it appears to be an excellent antisyphilitic remedy which ought to be placed by the side of mercury. If it is to become generally used, however, it needs to have the technic of injection perfected. Its efficacy is sometimes perhaps superior to that of good mercurial treatment in moist syphilides, in precocious malignant syphilides, and in tertiary ulcerations of the mucosæ. It is almost equal to that of mercury in certain papulous syphilides and in ulcerating tertiary syphilides of the skin. It seems inferior to that of mercury in certain roseolas and in acneiform and tuberculosquamous syphilides. No longer periods of immunity from complications seem to be afforded by arsenobenzol than by good methods of mercurial treatment. It seems, then, that the new

remedy ought not to replace mercury and the iodids in the treatment of syphilis, all the more since the contra-indications to its use are so important that the detractors of the remedy say that arsenobenzol is a remedy for syphilitics who are rather healthy.

Drs. Levy-Bing and Lafay advise the use of oil as the vehicle to diminish the pain which accompanies the injection. Their method is like that recommended by Kromayer in Germany, but a different kind of oil is used. Levy-Bing and Lafay use a mixture of one part of hydrated wool fat to nine parts of poppy oil. These injections of "606" in an oil medium are well borne. There is no pain at the time of the injection, and the patients are not obliged to keep to their beds. Dr. Emery, who has just made an investigation in Germany on results obtained from various present-day methods, admits that injections in oil emulsions seem less painful and irritating than the injections used by Wechselmann, but both have the important disadvantage of sometimes becoming encysted and of being slowly absorbed always. The intravenous injections recommended now by Ehrlich, to be repeated several times followed, after some days or months, by an intramuscular injection, constitute the treatment of choice.

Dr. Milian remarks that although with the oil preparations there is little or no pain at the time of injection, that is really of small consequence, for the immediate pain lasts only a few minutes. What counts is the pain later on, which is produced the third or fourth day. The latter is almost inevitable, for it is due, not to the method employed, but to the absorption of the drug and to the inflammatory reaction provoked in the tissues.

Mortality from Tuberculosis in France

At the Académie de médecine on November 8, Prof. Albert Robin remarked that the statistics which gave France an unfavorable position in the ranks of tuberculosis mortality, attributing to it 150,000 deaths annually, were inexact. According to the official statistics of the ministry of the interior, the number of deaths from tuberculosis in 1908, for example, was only 85,271, or 21.7 deaths per 1,000 inhabitants. Some of the deaths from tuberculosis are recorded under categories such as acute bronchitis, chronic bronchitis, diseases of respiratory organs, etc.; but the number of deaths in these various classes continues to diminish from year to year like the deaths from tuberculosis. The indications are that the campaign against tuberculosis in France is efficacious, although sanitariums are less used here than in other countries.

The Insufficiency of the Equipment of Our Clinics

On his return from Copenhagen, where he had been invited to be present at the inauguration of the new Rigshospital clinics, Prof. J. Teissier, of Lyons, published an article comparing the parsimony of allowances made to our services of instruction and the insufficiency of the equipment of our laboratories with the richness of analogous equipments abroad. Professor Teissier thinks that there is no more need to discuss the respective merits of a corps of *agrégés* appointed after a more or less perfect competition or of a privat-docent system about which some are beginning to complain in Germany and which Italy thinks of replacing by our much-abused *concours d'agrégation*. The first necessity is to provide the necessary equipment and income and to liberate medical instruction from the public charities and from the hospital administrations by creating government establishments for the purpose. Professor Quénu, of Paris, likewise complains of the insufficient funds for clinical instruction; the annual budget of the laboratory attached to Dr. Quénu's surgical service does not exceed $400 (2,000 francs).

Repair of the Damages from the Fire in the Toulouse Medical School

On the day after the fire which destroyed the library of the Toulouse medical school, the ministry of public instruction ordered an investigation of the results of the fire. There were over 150,000 volumes, brochures, theses, etc., destroyed. They were insured for $50,000 (250,000 francs), but they were worth much more. The university is requesting donations of duplicates and original publications from French and foreign universities and institutions of learning—a plan successfully employed by Turin and Ottawa after their libraries were destroyed by fire.

Personal

In its session of November 8, the Académie de médecine elected two foreign associate members, Professors Loeffler, of Greifswald, and Retzius, of Stockholm.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Nov. 10, 1910.

The Puro Trial

The court process against the maker of the "Puro" meat juice, which I reported to you last year has had a second trial after an appeal by the convicted manufacturer, Dr. Scholl. After the evidence of various medical experts, both for and against the accused, he was convicted this time not of fraud but of breaking the food law and was condemned to a money fine of $250 (1,000 marks) but not to imprisonment. As a basis of the verdict, it was shown that the statements in the advertisements and on the labels were incorrect, and that the claim of the accused, that these statements had inadvertently been allowed to remain after the change in the manufacture of "Puro," was not credible. No property injury was assumed, as it was considered proved that the material was utilizable for its purpose and that the price was not exorbitant. Dr. Scholl has also appealed from this ruling.

Peculiar Fee Offered to a Physician

In a hunting magazine a few weeks ago, the following amusing advertisement appeared: "Opportunity to hunt a good stag is offered to a well-known authority in diseases of women. As compensation it is required that he make a correct diagnosis of the case of my wife during his stay at the hunting lodge." It is not known whether he has found a gynecologist to undertake the task.

Official Circular Regarding the Use of the Nursing-Bottle

With reference to the question of introducing or rejecting a law like that of France, forbidding the sale of all nursing-bottles with a tube, the question has been asked the Prussian authorities whether regulations on this matter should be established. The minister of education has inquired of his subordinates whether the use of this form of bottle is increasing or diminishing, what its disadvantages are and to what extent industrial interests would be affected by forbidding its use.

Literary Books for Physicians

The members of the Hamburg medical society numbering several hundred, have determined to place in their library a department for literary works which have been written by physicians or in which physicians or medical questions play a large rôle. These books are to be accessible to the members in the same way as the other departments of the library.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Nov. 15, 1910.

A Forest and Garden-Zone Around Vienna

Some weeks ago, a new park, constituting another link in the chain of parks and gardens around Vienna, was opened in this city. The idea of ensuring a constant supply of pure air for this city with its sad distinction of being a hotbed of tuberculosis is due to the late mayor of Vienna, with whom the gratitude of the future generations will always associate the "garden-zone." Owing to the enormous growth of the city, the outskirts are being studded with factories and buildings; the prevalent winds, northwest and southeast, have always brought smoke into the heart of the city. The late mayor, in spite of very powerful opposition, caused a law to be passed which prohibited the erection of factories within a radius of 10 kilometers (6 miles) from the center of Vienna; furthermore, an area of some 500 to 1,400 meters (⅓ to 1 mile) has to be kept free from buildings all around Vienna. This space has been converted into a garden ring and when completed, will encircle the capital like a continuous belt of parks, meadows and woods. An abundant supply of water for ponds and ornamental cascades has been provided. The population has been quick in learning the advantages offered them by the splendid air-reservoirs and already this ring is a favorite playground for the children.

A Medical Insurance Company

The repeated occurrences of conflicts between insurance companies and their medical men as well as the high premium demanded by the companies for the insurance of our professional brethren against accidents as well as invalidism, have had an unexpected result. A short time ago, the Medical Organization Committee began to agitate for a medical insurance company, to be run by medical men for medical men, with money coming from the profession. This was achieved very quietly, in spite of great opposition from the existing

companies, and now the "Kosmos," as the new society is termed, has taken up its work. Subscriptions came from physicians from all the empire, and the funds at disposal are much larger than originally expected. The premiums of Kosmos are much below those asked by other companies, so that the general public has already availed itself of this opportunity. The fact that medical enterprise was able to make the profession independent in this respect has caused much surprise, and will undoubtedly strengthen its position in other respects, too.

Austrian Cancer Society

After long preparation, the Austrian Cancer Society has held its first meeting recently. Its purpose is twofold: The scientific campaign against malignant growth will be conducted in special cancer-research institutions, and public instruction as to the nature and necessity of the early removal of cancer will be attempted on liberal lines. For the research the leading pathologists and surgeons of the Vienna University (Weichselbaum, Paltauf, Eiselsberg, Schauta) have become members of the committee which will manage the society. The other branch of the work will be carried on by the distribution of popularly worded leaflets dealing with cancer, the institution of lectures for the middle and lower classes both in towns and rural districts and last, not least, the admonition of practitioners to prevent undue loss of time and chance. The late Professor Chrobak caused to be distributed in his gynecologic clinic similar leaflets with a warning as to breast and uterine cancer.

Hungarian District Medical Officers

A law, passed in 1908, requires every community of more than 5,000 inhabitants to provide a district medical officer, who must hold a diploma as doctor of public health. For this purpose the whole country has been divided into sanitary districts. The number of men necessary to fill these posts is 350. But the budget of the Hungarian government provides for only eighty-three such posts. The payment is 1,600 kronen ($320) and no old-age provision. Naturally the standard of sanitation in the rural districts is a very low one in this country. Even the recent outbreak of cholera did not convince the local magistrates of the necessity for unusual measures and proper medical supervision of the country.

Marriages

FRANK C. HAYES, M.D., to Miss Lucy Yarborough, both of Camden, Ill., November 9.

ROBERT C. HOGUE, M.D., to Miss Blanche Reebols, both of Norfolk, Va., November 17.

CHARLES ELLIOTTE HOWARD, M.D., to Miss Nettie Schmidt, both of Cincinnati, November 23.

LEO A. PARKER, M.D., Brooklyn, N. Y., to Miss Helen L. Phelan, at Brooklyn, November 16.

LEWIS D. REMINGTON, M.D., to Mrs. Cassie A. Matthews, both of Monrovia, Cal., November 16.

EDWARD J. THAYER, M.D., to Miss Florence E. Reynolds, both of New York City, November 21.

WILLIAM H. SCHMIDT, M.D., Atlantic City, to Miss Mary Grace Clark of Philadelphia, November 23.

NOEL C. WOMACK, M.D., Jackson, Miss., to Miss Jean McLaurin, of Brandon, Miss., November 15.

JOHN SCOTT WILLOCK, M.D., Pittsburg, Pa., to Miss Anne Elizabeth Bowes, of Baltimore, November 15.

BONAPARTE P. NORVELL, M.D., Muskogee, Okla., to Miss Bessie Carter, of Palmyra, Mo., November 14.

CHARLES THOMAS PYLES, M.D., Hancock, Md., to Miss Mary Elizabeth Griffith, at Poolesville, Md., November 16.

ROBERT FRENCH COMPTON, M.D., Charlottesville, Va., to Miss Mary Barbour Rixey, at Charlottesville, November 8.

CHARLES VICTOR HAGGMAN, M.D., Concordia, Kan., to Miss Clementine Creager, of Kansas City, Mo., November 12.

GEORGE SHELDON ADAMS, M.D., Yankton, S. Dak., to Miss Valborg S. Smith, of Dell Rapids, S. Dak., November 10.

GRANVILLE HAMPTON RICHARDS, M.D., Port Deposit, Md., to Miss Mary Emma Wright, at Baltimore, November 16.

JOHN STANLEY COULTER, M.R.C., U. S. Army, Washington, D. C., to Miss Helen Miller, of Mount Airy, Pa., November 21.

Deaths

James Ross Waggener, M.D. Jefferson Medical College, 1872; a member of the American Medical Association; medical director, U. S. Navy, retired; died in the Corry Hill Hospital, Brookline, Mass., November 17, aged 64. Dr. Waggener entered the United States Navy in 1872, and after thirteen years sea service and sixteen years and two months shore or other duty, was retired as medical director, May 6, 1907, on account of incapacity resulting from an incident of service. He served from 1875 to 1877 in the Naval Hospital, Norfolk, Va., was made passed assistant surgeon in 1875, surgeon in 1887, and attained the rank of captain in 1903. During the Spanish-American War he was attached to the Mare Island Navy Yard, and later was on duty at the Naval Hospital, Cavite, P. I.

Edmund W. Stevens, M.D. Jefferson Medical College, 1884; a member of the American Medical Association, American Ophthalmological Society and American Academy of Ophthalmology and Oto-Laryngology; president of the Denver County Medical Society in 1907; ophthalmologist to the Denver County, St. Anthony's and Mercy hospitals; formerly instructor in diseases of the eye in the Philadelphia Policlinic; died at his home in Denver, October 30, from nephritis, aged 47.

James C. Nidelet, M.D. Missouri Medical College, St. Louis, 1860; surgeon in the Confederate service during the Civil War; one of the founders and for several years professor of anatomy and dean of the faculty of McDowell Medical College, St. Louis; for four years a member of the board of police commissioners, and for two years vice-president of the board; died at his home, November 15, from heart disease, aged 76.

George S. Stein, M.D. University of Pennsylvania, Philadelphia, 1864; a member of the American Medical Association and Mississippi Valley Medical Association; assistant surgeon, U. S. Army during the Civil War; professor and emeritus professor of genitourinary diseases in the Ohio Medical University; died at his home in Columbus, November 19, from heart disease, aged 68.

Robert Gildea O'Hara, M.D. College of Physicians and Surgeons, Baltimore, 1885; formerly an officer in the English service; a member of the Medical Society of Virginia; physician for the Elks' National Home; and chairman of the board of health of Bedford City; died in St. Andrew's Hospital, Lynchburg, November 13, from heart disease, aged 54.

Leslie James Meacham, M.D. Cornell University, New York City, 1902; formerly a member of the American Medical Association and of the New York Academy of Medicine; visiting physician and psychotherapeutist to the Cornell Dispensary, Department of Neurology; died in New York City, October 23, from paresis, aged 50.

John J. Smith, M.D. Long Island College Hospital, Brooklyn, 1891; a member of the Washington State Medical Association; a member of the state legislature in 1899, and of the state senate in 1901, and chosen president of the latter body in 1903; died at his home in Enumclaw, November 12, from typhoid fever, aged 41.

Henry Heidelberg, M.D. St. Louis College of Physicians and Surgeons, 1891; member of the American Medical Association; and president of the Monroe County Medical Society; died at his home in Hecker, Ill., July 2, from cirrhosis of the liver, aged 40.

John Danforth Woodworth, M.D. Rush Medical College, 1852; formerly president, supervisor and member of the school board of Leslie, Mich.; a member of the legislature in 1860; and surgeon of volunteers throughout the Civil War; died at his home in Leslie, November 7, from senile debility, aged 85.

Theodore Rudolph Burgtorf, M.D. Eclectic Medical College of the City of New York, 1891; Long Island College Hospital, Brooklyn, 1894; a member of the Medical Society of the State of New York; was shot and killed by his mentally-deranged wife at his home in New York, November 14, aged 55.

Fred W. Inman, M.D. University of Michigan, Ann Arbor, 1864; a pioneer manufacturer of cereals; one of the founders and president of the Florida Citrus Exchange; a surgeon in the army during the Civil War; died at his home in Winter Haven, Fla., November 6, from cerebral hemorrhage, aged 70.

Lutellus Lindley Porter, M.D. Medical College of Ohio, Cincinnati, 1869; a member of the American Medical Association; for many years mine physician and local surgeon of the Northern Pacific Railroad at Roslyn, Wash.; died at his home in North Yakima, Wash., November 15, from cancer, aged 63.

Thomas Robinson Little, M.D. University of Pennsylvania, Philadelphia, 1900; a member of the American Medical Association; medical director of the Southern Life and Trust Company; died at his home in Greensboro, N. C., November 15, from the effects of an overdose of morphin, aged 36.

William Forrest Gatchell, M.D. George Washington University, Washington, D. C., 1891; a member of the Medical Association of the District of Columbia; formerly chief clerk of the Steamboat Inspection Service; died at his home in Washington, November 16, from nervous prostration, aged 51.

Joseph Adams, M.D. Western Homeopathic College, Cleveland, 1859; M.C.P. & S., Ont., 1869; a member of the Council from 1869 to 1875; and a member of the Board of Examiners in 1880; Chicago Homeopathic Medical College, 1882; died at his home in Toronto, September 26, aged 85.

Joseph Francis Finn, M.D. College of Physicians and Surgeons, New York City, 1854; first county physician of Hudson County, N. J.; a member of the Board of Education of Jersey City from 1899 to 1901; died at his home in Jersey City, November 19, from acute gastritis, aged 77.

James E. Thompson, M.D. Baltimore University, School of Medicine, 1897; died at his home in Throop, near Scranton, Pa., September 18, from the effects of a bullet wound of the head, believed to have been self-inflicted with suicidal intent while suffering from melancholia.

Charles W. Rodgers, M.D. University of Virginia, Charlottesville, 1886; a member of the Medical Society of Virginia; for many years a member of the State Board of Medical Examiners; died at his home in Staunton, November 15, from tuberculosis, aged 48.

Albert M. Clinkscales, M.D. Jefferson Medical College, 1877; a member of the American Medical Association; formerly president of the Indian Territory Medical Association; died at his home in Vinita, Okla., November 17, from cerebral hemorrhage, aged 55.

Chester L. Stewart, M.D. Berkshire Medical College, Pittsfield, Mass., 1851; since 1893 president of the Board of Pension Examiners of Randolph, Vt., where he had practiced for fifty-six years; died at his home, November 16, from heart disease, aged 81.

George Sanford Post, M.D. Albany (N. Y.) Medical College, 1899; of Holley, N. Y.; a member of the Medical Society of the State of New York; died in the City Hospital, Rochester, October 25, from general septicemia following appendectomy, aged 38.

Alfred Alfonso Harper, M.D. Baltimore Medical College, 1902; a member of the American Medical Association; a member of the board of health of North Adams; died at his home in that city, November 14, from rheumatic arthritis, aged 34.

William F. Waite, M.D. University Medical College, Kansas City, Mo., 1893; a veteran of the Civil War; and a clergyman of the Christian Church; once city physician of Kansas City, Kan.; died at his home in that city, November 11, aged 62.

William Francis Shine, M.D. Tulane University, New Orleans, 1858; of St. Augustine, Fla.; surgeon in the Confederate army during the Civil War; assistant surgeon, U. S. Army; died in the Flagler Hospital, St. Augustine, October 21, aged 71.

Samuel M. Ried, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1878; a member of the Indiana State Medical Association; for ten years health officer of Muncie, Ind.; died at his home in Muncie, November 7, aged 68.

James Edgar Sawdon, M.D. Trinity Medical College, Toronto, 1902; M.R.C.S., Eng. and L.R.C.P., Eng., 1908; formerly of Blind River, Ont., but later of Listowel, Ont.; died at his home in that place, August 30, from small-pox.

Jesse B. McBride, M.D. University of Pennsylvania, Philadelphia, 1865; a surgeon during the Civil War; for many years a resident of Columbia, Pa.; died at his home in Washington, D. C., October 27, aged 68.

Joseph R. Whalen, M.D. Louisville Medical College, 1894; demonstrator in anatomy in his alma mater for a year thereafter; died at his home in Carlisle, Ind., November 10, from cerebral hemorrhage, aged 49.

Hanford Benedict (license, Ind., 1897); a member of the Michigan State Medical Association; for three terms postmaster of Springport; died at his home, November 6, from cancer of the liver, aged 73.

Harry W. Bradley, M.D. Detroit College of Medicine, 1909; a member of the Saginaw County Medical Society; died at the home of his parents in Saginaw, Mich., November 16, from typhoid fever, aged 25.

John Wesley Willis, M.D. Meharry Medical College, Nashville, 1902; a colored practitioner of Bowling Green, Ky.; died suddenly in a church in that city, October 30, from cerebral hemorrhage, aged 42.

Stiles R. Fox (license, Ind., years of practice, 1897); for thirty-five years a practitioner of Lafayette, Ind.; died at St. Elizabeth's Hospital in that city, November 16, from cerebral hemorrhage, aged 62.

Robert Dunlop, M.D. Hospital College of Medicine, Louisville, 1884; for many years physician to the Little Sisters of the Poor; died at his home in Louisville, November 9, from uremia, aged 57.

James Richard Sowers, M.D. George Washington University, Washington, D. C., 1859; a Confederate veteran; died at his home in Warrenton, Va., November 13, from cerebral hemorrhage, aged 73.

William G. Hart, M.D. Vanderbilt University, Nashville, 1877; a member of the State Medical Association of Texas; died at his home in Gordon, November 15, from cerebral hemorrhage.

Henry W. Boorn, M.D. Albany (N. Y.) Medical College, 1866; a member of the Medical Society of the State of New York; died suddenly at his home in Schenevus, November 8, aged 70.

Benjamin Franklin Lisk, M.D. (license, Fla., 1885); of Grahamville; drove into the Ocklawaha River, at the ferry near Grahamville, November 7, and was drowned, aged 73.

James Columbus Ozee (license, Ill.); for thirty-five years a practitioner of Illinois; died at the home of his brother in Mattoon, November 2, from cerebral hemorrhage, aged 69.

Herbert George Chislett, M.D. Hahnemann Medical College, Chicago, 1903; of Berwyn, Ill.; died in the Hahnemann Hospital, Chicago, November 22, from pneumonia, aged 44.

Daniel Wayland Jones, M.D. New York University, New York City, 1852; a member of the American Medical Association; died at his home in Boston, November 7, aged 81.

William H. Nichols, M.D. Albany (N. Y.) Medical College, 1867; for forty-three years a practitioner of West Sand Lake, N. Y.; died at his home in Troy, N. Y., October 31.

J. D. Orr, M.D. Atlanta (Ga.) Medical College, 1878; a member of the South Carolina Medical Association; died at his home in Spartanburg, November 6, aged 52.

Ulysses G. Talley, M.D. Meharry Medical College, Nashville, 1896; a well-known colored practitioner of New Orleans; died at his home in that city, November 3, aged 38.

Joseph L. Taylor, M.D. Eclectic Medical Institute, Cincinnati, 1873; died at his home in Logansport, Ind., November 13, from acute gastritis, aged 71.

Charles William Clough (license, years of practice, Mass.); a practitioner since 1888; died at his home in Conway, Mass., November 16, from nephritis, aged 53.

Henry Wheelock Browne, M.D. Harvard Medical School, Boston, 1856; died at his home in Hubbardston, Mich., November 8, from heart disease, aged 78.

Abraham Virgil Conklin, M.D. Eclectic Medical Institute, Cincinnati, 1869; died at his home in Delaware, Ohio, October 28, from pneumonia, aged 77.

John R. Chatham, M.D. Washington University, St. Louis, 1873; died at his home in Tamms, Ill., November 13, from cerebral hemorrhage, aged 68.

John R. McCauley, M.D. College of Physicians and Surgeons, St. Louis, 1891; died at his home in Sulphur Springs, Tex., October 31, aged 57.

Richard K. Gregory, M.D. New York University, New York City, 1860; died at his home in Greensboro, N. C., September 10, aged 74.

Charles J. Ramsey, M.D. Southern Medical College, Atlanta, Ga., 1891; died at his home in Roswell, Ga., November 2, aged 42.

William Henry Graham, M.D. Toronto School of Medicine, 1871; died at his home in Toronto, June 21, from pneumonia, aged 61.

Pharmacology

RADIO-SULPHO CANCER CURE

"A Bad Smell Capitalized for a Million Dollars"

Of "cancer cures" there seems no end. One of the latest humbugs in this line is known as "Radio-Sulpho" and is sold by the "Radio-Sulpho Company," of Denver. The company is incorporated for $1,000,000 and has for its "consulting physician," E. H. Griffith, M.D., and for its president, one Philip Schuch, Jr., who modestly describes himself as a "chemist and cancer specialist."

Mr. Schuch, Jr., says that he has discovered that the vaccine used in vaccination is the cause of cancer and, further, that he is "able to culture the cancer germs direct from the vaccine." Schuch, Jr., "cures" cancer by means of a combination of "Radio-Sulpho," "Radio-Sulpho Brew" and Limburger cheese. This is not a joke but a "method" recommended by the Radio-Sulpho Company.

Incidentally, Schuch, Jr., has recently leaped into the limelight of newspaper publicity by proposing to introduce at the coming session of the Colorado legislature a bill making it a penal offense to perform an appendicectomy on any but a diseased appendix. Mr. Schuch's love for the medical profession has waned, apparently, since the State Board of Health of Colorado condemned his odoriferous "cancer cure," saying that it is "misbranded, of no medicinal value and that it contains sewer gas."

The patient is instructed to wash the cancer with dilute Radio-Sulpho solution and then apply the "cheese poultice." The poultice is to be made by taking one pound of "real imported" Limburger cheese and kneading it thoroughly with five ounces of pure glycerin. The poultice and washing are to be renewed every twelve hours. Says Mr. Schuch, Jr.:

> "A person that has a weak constitution . . . should never use the Limberger [*sic*] cheese for a poultice, as it is too powerful a magnet. A person must be robust and healthy, aside from the cancer, to stand the powerful drawing of Limberger [*sic*] cheese, prepared as described."

This statement is certainly the most—and possibly the only—conservative one in the booklet which is sent out by the concern. The mere thought of plastering a sick person with such an indescribably nauseating mess as Limburger cheese and glycerin is enough to sicken one. Nor is this all! The nostrum itself has as vile an odor as the cheese. In fact, it reeks with sulphuretted hydrogen (the gas which imparts the distinctive odor to rotten eggs) and the state chemist of Colorado has aptly characterized the nostrum as "a bad smell capitalized for $1,000,000."

The Radio-Sulpho Brew is to be taken internally at the same time that Radio-Sulpho is used as a "wash." Both these products were analyzed by the Colorado State Board of Health, and the state chemist, Dr. E. C. Hill, reports as follows:

> "Radio-Sulpho itself consists of a strongly alkaline solution of sodium sulphid, with a little sodium carbonate and a decided odor of hydrogen sulphid (made presumably by heating together sulphur and commercial caustic soda in water).
>
> "Radio-Sulpho Brew is a weakly alcoholic solution of Epsom salts disguised with a bitter vegetable."

The cost of this evil-smelling treatment is $25.00 a month "and upward." Victims are told that "cancer of the womb and breast are the simplest, easiest and quickest cures made." Schuch, Jr., who apparently has no medical education and no legal right to practice medicine, states in his booklet: "I treat personally the white race only." His charges are: "$100.00 per day or part of a day and all railroad expenses *going* to points east of the Mississippi, or west of Salt Lake, Utah. . . ."

An absurd falsehood, even for a nostrum concern whose stock-in-trade is deceit, is found in the booklet:

> "When you buy our remedies at the prices we herein quote you, you are not paying the FULL COST of the manufacturing and the marketing of the remedies. You are only paying your share, and I, as a philanthropist, bear the remainder and the greater burden."

The thought of a million dollar quack organization selling its products at a loss would be amusing, if the business it is in were not such a cruel and heartless one. Of course those who are desperately or incurably ill with cancer will grasp at any straw, however worthless or dangerous. But that the physical suffering and mental anguish of these unfortunates should be increased by the barbarous malpractice of "cancer cure" fakers and by the blasting of hopes falsely raised, is an outrage that civilized communities should not tolerate.

CHINOSOL—A CORRECTION

One of the most valuable pieces of original pharmacologic work done recently was that reported by Post and Nicoll in THE JOURNAL, Nov. 5, 1910. In general these experimenters showed that the efficiency of many germicides—proprietary and others—in common use, and for which broad claims are or have been made, is as a matter of fact practically *nil*. But in publishing the results of this work, THE JOURNAL unwittingly did the manufacturers of one of the products dealt with an injustice. Among the various preparations with which the investigators experimented was the proprietary antiseptic chinosol. This product was taken up with the others, because, at the time the experiments were made and the article was written, chinosol was advertised and sold as a germicide. In the interim between the acceptance of Drs. Post and Nicoll's article and its publication, however, the Council on Pharmacy and Chemistry proved to the satisfaction of its manufacturer that chinosol is but a very indifferent germicide, although it is an exceedingly powerful antiseptic. As chinosol has not for some time been advertised or sold as a germicide reference to that product should have been deleted from the article in question before publication, but by an oversight, the responsibility for which THE JOURNAL accepts, this was not done. With the present confused ideas on the subject of germicides and antiseptics and the very general misconception that there is little difference between these two classes of products, it is well to call attention to the fact that although a preparation may have little value as a germicide it can still be a powerful and useful antiseptic.

Correspondence

Opportunities for Physicians in Mission Lands

To the Editor:—Thirty vacant fields for medical men and twenty-two for medical women, with no competition and unlimited opportunities for original research, have been brought to my attention by various missionary societies. Some hospitals have had to be closed for lack of workers.

For men with pioneer instincts, there are great fields entirely unoccupied, while for expert surgeons there is work at hand which is already self-supporting. Several internships, from one to three years, are also open for recent graduates.

For women to whom the experience of Dr. Susie Rijnhart, of Thibet, appeals, there are great fields entirely unoccupied, while for experienced surgeons there are hospitals waiting.

All this work is under the missionary societies of the various Protestant churches of the United States and Canada.

The work requires men and women of good health and rugged constitution, not over 35 years of age, graduates of first-class medical schools (in some instances only those who have had both collegiate and professional training, together with either postgraduate or hospital experience), members of some Protestant church, and definitely interested in the religious motives and purpose of medical missions.

Comfortable support is provided by the missionary societies. This includes traveling expenses for physicians and their families, provision for outfit, living quarters, language teachers, etc., in addition to which a salary is paid which is based on what experience shows to be needed to maintain the worker in the highest state of efficiency. This varies in different countries. The net result is the same. It is not a work which will attract one who seeks large financial returns. The work demands those of heroic mold, who want to find the place where their medical skill is needed and where all their training will be utilized to the utmost. The work demands devotion, wide sympathy and earnest purpose. From a purely professional standpoint, these opportunities are unparalleled. A woman graduate of a Canadian university, who went to Arabia a few years ago, reported after a fort-

right in the only hospital along the coast of a thousand miles: "During my visit here we have had twenty operations on the eye, one amputation, the removal of a large tumor and numerous teeth extracted. In medicine we have had pleurisy, tuberculosis, tetanus, small-pox, leprosy, paraplegia, different varieties of heart-lesions and other interesting cases. In gynecology we have the usual run of inflammations and displacements, with atresia for a specialty. One of the peculiarities of the people here is that they never present themselves for treatment until the disease is far advanced, but of course there is an excuse for them in some cases, as they may have suffered for years before there was a hospital to come to. About 75 per cent. of the people seem to have eye trouble of some sort. Trachoma, trichiasis, ulceration and opacity are the commonest forms; yet inside a week one meets everything from simple ophthalmia to panophthalmitis. In fact, one would have to be a specialist in every branch of medicine and surgery to do justice to the amount and range of material."

Calls are now in my hands from great cities, as well as country districts of China, Africa, Persia, the Philippine Islands, Egyptian Sudan, Arabia, Mexico, Turkey and Korea.

I shall be glad to give further details to any physician to whom this opportunity for service appeals.

WILBERT B. SMITH,
Acting Candidate Secretary, Student Volunteer Movement.
125 East Twenty-Seventh Street, New York City.

Dr. Shepard and the Turkish Bath

To the Editor:—The death of Dr. Charles H. Shepard, of Brooklyn, Oct. 29, 1910, deserves more than a passing notice, from the fact that he was literally the founder and promoter of the Turkish bath movement in this country. He was born in Ogdensburg, N. Y., Sept. 25, 1825, and received a medical degree from the New York Medical College in 1848. In 1861 he opened, on a broad scientific basis, the first Turkish bath in America, at Columbia Heights, Brooklyn, and of this he continued in active charge up to the time of his death.

He was a member of the American Medical Association and was secretary in 1893 and 1894 and chairman in 1895 of the section now designated the Section on Preventive Medicine and Public Health. For many years he contributed articles to this Section, and was one of the earliest writers in this country on the medical use of water, particularly in the form of Turkish baths. Some of his papers were translated abroad and were widely circulated as graphic presentations of the value of baths in various diseases.

In 1876 he treated a case of hydrophobia with success at the Turkish bath; and this at the time attracted considerable attention, and was the subject of many theories and discussions. Dr. Shepard was one of the first men in this country to write with great positiveness on toxemias as active causes of disease, and he urged the elimination of toxic products through baths. Many of his early papers on this subject were practically forerunners of a literature that is growing constantly.

Dr. Shepard visited all the old and new baths of Europe, and made some studies of the Turkish and Roman baths, which were embodied in lectures and papers that were highly appreciated at the time. At one time he knew every bath in America as well as in Europe, and what was being done there, and was an adviser to the managers. His persistent efforts urging the use of the baths has brought them into popularity in all large sanatoriums and in some insane asylums.

It is understood that Dr. Shepard left a large mass of manuscript on the Turkish bath and on his experience of over fifty years, which will be published in the future. He died from heart failure, after a short period of invalidism, and his body was cremated, according to his wish.

T. D. CROTHERS, M.D., Hartford, Conn.

Electricity in Poliomyelitis

To the Editor:—Dr. Theodore Diller, commenting on Dr. B. Sach's paper of October 22, takes up the treatment of electricity (THE JOURNAL, Nov. 5, 1910, p. 1663), and condemns its use in poliomyelitis. If other medical colleges teach as much about electricity and its medical uses as the one I attended their graduates had something to learn after leaving college. I wish to protest against the condemnation of this most useful agent, which at times gives almost magical results even when abused in its use. If one forgets the dose of a medicament or takes up one with which he is unfamiliar, he looks in a "dose" book and prescribes accordingly. If the drug is a liquid it is usually dissolved in an alcoholic solution (and alcohol has been known to make people forget they ever had a pain).

When it comes to the use of electricity, either medicinally or commercially, there is more than one modality. In medicine the induced (faradic) current, the continuous (galvanic) current, given first direct and then make and break on the opposite pole, the static breeze and sparks, during the administration of which the little patient can be held in the nurse's arms; the motor wave current; then the high-frequency or step-up voltage from either the static or coil, give results that can be seen day to day.

Massage stimulates the nerves where they are kneaded; braces imprison already enervated muscles and thus diminish their size and use; transplantation of nerves or muscles helps in some instances. To use electricity requires time and patience; and if those who have neither of these condemn its use indiscriminately it shows lack of something. The fact that there are so many veiled references to it in literature is proof enough that there is virtue in the use of electricity.

The proper way to ascertain its value for definite presentation would be for the American Medical Association or the American Electrotherapeutic Association to appoint a committee to which scientists outside of medicine could furnish evidence and data not obtainable by the medical man and that would be authoritative.

ALMERIN W. BAER, PH.G., M.D., Chicago.

The Nasal Spatiometer: A Suggested Name for Dean's Septimeter

To the Editor:—I have just read with interest an article in THE JOURNAL (Nov. 26, 1910, p. 1858) by Dr. L. W. Dean, on "Changes in the Nose After Widening the Palatal Arch." It seems to me that Dr. Dean would attract more attention to his septimeter and to his particular line of investigation were he to give his instrument another name. There are septometers on the market. In fact, I described a nasal septometer in the *New York Medical Journal*, July 13, 1901. A nasal septometer is an instrument devised to measure the nasal septum, its thickness at any point. Dr. Dean's instrument was designed to measure, not the septum, but the distance between the septum and the turbinate bone; it might just as well be called a turbinometer. Now were he to name his instrument a "nasal spatiometer" he would more definitely describe the use of his device. The coined word is derived from the Latin words, *spatium*, "a space or distance," and *metrum*, "a measure." I think that Dr. Dean is entitled to differentiate his new device from an instrument that has been on the market for years.

HENRY WALLACE, Glen Ridge, N. J.

Phenol in Herpes

To the Editor:—For the past four years I have treated herpes with an application of a 95 per cent. solution of phenol. As soon as the skin begins to turn white I neutralize the phenol effect with alcohol. In many cases one application suffices; in no case is it necessary to make more than three applications. After one application of the 95 per cent. phenol I dress the lesions with a simple ointment like zinc oxid. It is surprising how quickly it will relieve the pain, itching and burning. The vesicles shrivel and dry up in a very short time leaving a dry crust. I first used it in herpes progenitalis with such satisfactory results that I was led to try it for herpes zoster, in which it gave equally satisfactory results. Looking over the literature of herpes, I have not been able to find phenol mentioned in its treatment.

G. P. COOPERNAIL, Bedford, N. Y.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

USE OF THE WORD "NUTRIANT"

To the Editor:—In reading the recent edition of Wood's "Therapeutics," pp. 12 and 283, I came across the word "nutriant." I fail to find this word in any of the dictionaries at hand. Is it a recognized word, and if so, what does it mean? Or is it a mistake for "nutrient"?

MEDICUS, Baltimore.

ANSWER.—We do not find "nutriant" recognized by any authorities on the English language. The word "nutriant," of course, could not be derived directly from the verb *nutrire*, the present participle of which is *nutriens*, from which we get "nutrient." The only verb from the same root as *nutrire* given in Harper's Latin Dictionary is *nutricare*, "to suckle, nourish, support, sustain," present participle *nutricans*. The word "nutriant" appears to be applied by Wood, not to substances which nourish—nutrients—but to substances which increase nutrition. A word with this meaning would be a useful addition to the English language, but "nutriant," since it differs from "nutrient" by only the vowel of the last syllable, has the disadvantage that it would be taken for a misprint for the latter in nine cases out of ten.

Dr. Horatio C. Wood, Jr., in reply to our letter regarding the matter, writes: "This word was coined many years ago to signify drugs which affect the metabolic, or nutritive, processes. The ending 'ant' was chosen to be in harmony with such terms as 'cardiant,' 'expectorant,' 'eliminant,' 'digestant,' etc. I recognize the force of your statement, that the word is so nearly like 'nutrient' as to lead to possible confusion, but it has been employed for nearly twenty years and the present instance is the first which has come to my notice of any uncertainty as to its meaning."

The Public Service

Medical Corps, U. S. Navy

Changes for the week ended Nov. 26, 1910.

Brister, J. M., surgeon, detached from the naval academy and ordered to duty at the naval hospital, Annapolis, Md.

Fauntleroy, A. M., surgeon, detached from the naval hospital, Philadelphia, and ordered to the *Solace*.

Iden, J. H., surgeon, detached from the naval hospital, Annapolis, Md., and ordered to the *Washington*.

Field, J. G., surgeon, detached from the *Washington* and ordered to Washington, D. C., for examination for promotion and to await orders.

Allen, A. H., P. A. surgeon, detached from the naval hospital, New York, and ordered to the *Washington*.

Robnett, A. H., P. A. surgeon, detached from the naval recruiting station, Cedar Rapids, Iowa, and ordered to the marine corps rifle range, Winthrop, Md.

Longabaugh, R. I., P. A. surgeon, detached from the *Washington* and ordered to the navy recruiting station, Cedar Rapids, Iowa.

Heiner, R. G., P. A. surgeon, detached from the naval hospital, Norfolk, Va., and ordered to the naval academy.

Strine, H. F., P. A. surgeon, ordered to duty at the naval hospital, Norfolk, Va.

Medical Department, U. S. Army

Changes for the week ended Nov. 26, 1910.

Marshall, John S., examining and supervising dental surgeon, reported for duty at Columbus Barracks, Ohio, November 19, from leave of absence.

Siler, Joseph F., captain, and Davis, William R., captain, Nov. 19, 1910, will proceed at the proper time to West Point, N. Y., and report on May 1, 1911, for duty until June 1, 1911, when each officer will return to his proper station.

Foster, George B., Jr., lieutenant, November 19, ordered to proceed to Philadelphia on official business pertaining to the medical department.

Taylor, Blair D., colonel, November 19, on his own application is retired from active service April 30, 1911, after more than thirty-five years' service. Granted leave of absence from January 1 to and including April 30, 1911.

Harris, Henry S. T., lieut.-col., relieved from duty at headquarters, Department of California, and will assume charge of the medical supply depot in San Francisco, relieving Col. D. M. Appel.

Appel, Daniel M., colonel, after being relieved will proceed to Atlanta, Ga., and report, not later than Dec. 31, 1910, to the commanding general, Department of the Gulf, for duty as chief surgeon of that department.

Eber, Albert H., lieutenant, Medical Reserve Corps, ordered to Fort Dade, Fla., not later than December 1, for temporary duty during absence of Lieut. J. R. Hereford, Medical Reserve Corps. On completion of this duty he will return to his station, Fort Moultrie, S. C.

Long, Charles J., dental surgeon, relieved from duty at Fort Adams, R. I., at expiration of his leave and ordered to Fort Andrews, Mass., for duty.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Nov. 23, 1910.

Austin, H. W., surgeon, granted three days' leave of absence from Nov. 17, 1910, under paragraph 189, Service Regulations.

Carter, H. R., surgeon, directed to rejoin station at Louisville, Ky., reporting at bureau en route.

Banks, C. E., surgeon, granted four days' leave of absence from Nov. 19, 1910.

Williams, L. L., surgeon, granted seven days' leave of absence from Nov. 14, 1910, under paragraph 189, Service Regulations. Granted one day's extension, Nov. 21, 1910.

Stoner, J. B., surgeon, granted six days' leave of absence en route to station.

Wertenbaker, C. P., surgeon, detailed to represent the service at the meeting of the Seaboard Medical Association, to be held in Kinston, N. C., Dec. 6-8, 1910.

Brown, B. W., surgeon, granted one month's leave of absence on being relieved by Surgeon F. W. Mead.

Lavinder, C. H., P. A. surgeon, directed to inspect the bacteriotherapeutic laboratory at Asheville, N. C., and to attend the meeting of the Seaboard Medical Association, to be held in Kinston, N. C., Dec. 6-8, 1910.

Lumsden, L. L., P. A. surgeon, granted seven days' leave of absence from Nov. 16, 1910, under paragraph 191, Service Regulations.

Burkhalter, J. T., P. A. surgeon, granted one month's leave of absence from Dec. 17, 1910.

Boggess, J. S., P. A. surgeon, leave of absence for one month from Nov. 14, 1910, amended to read from November 21.

Creel, R. H., P. A. surgeon, relieved from duty at Chicago and directed to report at bureau for temporary duty Nov. 21, 1910. Granted three days' leave of absence en route.

Hotchkiss, S. C., A. A. surgeon, granted seven days' leave of absence en route to station.

Lyons, R. H., A. A. surgeon, directed to proceed to the gulf quarantine station for temporary duty.

Appleton, T. J., A. A. surgeon, granted seven days' leave of absence under paragraph 210, Service Regulations.

Bailey, C. A., A. A. surgeon, directed to proceed to St. John, N. B., on or about Nov. 22, 1910, for medical examination of aliens.

Duke, B. F., A. A. surgeon, granted twenty-five days' leave of absence from Nov. 11, 1910.

Frary, T. C., A. A. surgeon, granted ten days' leave of absence from Nov. 22, 1910.

Gill, S. C., A. A. surgeon, granted twenty-nine days' leave of absence from Dec. 3, 1910.

Gregory, George A., A. A. surgeon, granted thirty days' leave of absence from Nov. 10, 1910.

Moncure, J. A., A. A. surgeon, granted thirty days' leave of absence from Nov. 17, 1910.

Nute, A. J., A. A. surgeon, granted thirty days' leave of absence from Nov. 7, 1910.

Sexton, Leo L., A. A. surgeon, granted seven days' leave of absence from Oct. 5, 1910, under paragraph 210, Service Regulations.

Sinclair, A. N., A. A. surgeon, granted twenty-six days' leave of absence from Dec. 6, 1910.

Board of medical officers convened to meet at the marine hospital, Port Townsend, Wash., Nov. 21, 1910, for the purpose of making a physical examination of an officer of the Revenue-Cutter service. Detail for the board: Surgeon P. M. Carrington, chairman; Surgeon J. H. Oakley, recorder.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

INFANT MORTALITY AND BIRTH REGISTRATION

One of the most important reports presented at the recent meeting of the American Association for the Study and Prevention of Infant Mortality was that of the Committee on Birth Registration, consisting of Dr. Cressy L. Wilbur, chairman; Dr. Wilmer R. Batt, Pennsylvania; Dr. Charles V. Chapin, Rhode Island; Dr. John S. Fulton, Maryland; Dr. John N. Hurty, Indiana; and Dr. William C. Woodward, District of Columbia. The committee stated that study and knowledge of infant mortality should precede efforts for the prevention of such mortality, since the nature and exact extent of the causes of infant mortality must be understood before the most effective means could be used for its prevention, or the efficiency of the various agencies employed be measured. While it is not necessary to consult a table of statistics to know that filthy, bacteria-teeming milk should

not be used for infants, and while no statistics are necessary for the prevention of mortality from intestinal diseases in infants, yet our knowledge of the prevalence of these diseases has resulted from thorough registration of births and deaths. If the American Association for the Study and Prevention of Infant Mortality is to lead in the saving of infant life, it must have vital records by which its success can be measured, and it is, therefore, one of the paramount duties of the organization to support all efforts for better vital statistic legislation. What is needed is a series of accurate figures regarding infant mortality for cities, rural districts, states, and the nation as a whole. They should be reliable, up to date, and presented in such form as to be comparable among themselves and with those of foreign countries. A thorough analysis of the returns should be made with regard to the cause of death, nativity, occupation of parents, sanitary condition of dwellings, etc. The first step is to secure complete and comparable data for the entire infant mortality, adding other details later. Accurate statistics regarding infant mortality require the registration of both births and deaths, since infantile mortality is the ratio of the number of deaths of infants under one year of age to 1,000 children born alive, and not to the estimated population of that age. True infantile mortality can not be computed from the registration of deaths alone unless the birth rate is also known. Consequently, under existing conditions, it is impossible to present reliable statistics of infantile mortality for the United States, for any single state, or even for a single large city in the entire United States. The present registration area includes only 55.3 per cent. of the total population, as many states, including practically the entire South, make no record of deaths of their citizens, while even those states that have fairly good death registrations, grossly neglect birth registration. As an illustration of the importance of birth registration, the committee report quotes from the graphic examples cited by Dr. J. N. Hurty, in his chairman's address before the Section on Preventive Medicine and Public Health.[1]

The committee discusses the duties of physicians and midwives in registering births, holding that they are not charged with the enforcement of the registration laws, but that it is their duty to obey these laws and that if they do not obey them, it is the duty of the registration officials to compel them to obey, under penalty of the law. Not even in New York City are the birth records complete, according to the local department of health, "there being still many that are not recorded by reason of the neglect of medical attendants and midwives." Regarding other cities, the report continues: "It is a little difficult to decide in which of these great and prosperous cities of the United States—Baltimore, Chicago or New Orleans—the registration of births is most utterly worthless, but it is certain that it would not be possible to find their equals for worthlessness in any other country where vital records are maintained."

The remedy proposed by the committee is the enactment of adequate laws for the complete registration of births and deaths and the thorough enforcement of these laws. After discussing the model law endorsed by the American Medical Association, the American Public Health Association, the Bureau of the Census and other bodies, the experiences of Pennsylvania, Ohio, and Missouri under this law are reviewed. At present, while the registration area for deaths is being rapidly extended, the registration of births is confined to a very few states and even these have only an approximate registration of 90 per cent. The New England states, Michigan, and the District of Columbia have fairly satisfactory birth registration laws, but Pennsylvania is to-day the only state in which a determined effort has been made to secure complete registration of all births. In the great majority of states the law (where one exists) is practically a dead letter with the result that birth statistics and figures for infant mortality are both practically worthless.

The committee utters a warning against needless tampering with vital statistics laws or forms of registration and urges that no change be made in the model law or in the blank certificates, during the next ten years. Much of the imperfection of what vital statistics we have is due to the absence of a uniform blank for the initial data. This defect has been remedied by the adoption of standard certificates and any alteration should be discouraged until the defects assume sufficient importance so that the next general revision can include them, and all of the registration states can adopt them at the same time. In the words of the report: "We want no more tinkering with the forms in use until the time arrives for a general change." The vital statistics registration laws of England are reviewed and conditions there compared with those in this country. In the opinion of the committee, "It is unfortunate that the question of compensation to physicians and midwives should be urged by the medical profession in connection with the legislation for the registration or notification of vital statistics, because it at once places the profession in the position of asking a favor for interested motives, and may be denounced as 'medical graft' by many members of state legislatures. It retards the cause of registration, has no good effect whatever on the completeness of the returns, and interferes with the thorough enforcement of the law." The committee also emphasizes the necessity for greater precision in terminology and for the adoption of a uniform nomenclature.

The conclusions of the committee were embodied in a preamble and resolution, which were unanimously adopted by the Association:

WHEREAS, The registration of all births and of all deaths is most essential for the study of infantile mortality and the prevention of the deaths of infants and children from avoidable causes; therefore, be it

Resolved, That the American Association for the Study and Prevention of Infant Mortality cordially approves of the model law for the registration of births and deaths, as recommended by the American Medical Association, the American Public Health Association, and the United States Bureau of the Census, and urges the thorough enforcement of such laws by the officials charged with the responsibility of their execution, with prosecution of physicians and midwives who neglect their duties to their clients and to the public health by failing or neglecting to register births as required by law.

1. Hurty, J. N.: The Bookkeeping of Humanity, THE JOURNAL A. M. A., Oct. 1, 1910, p. 1157.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Fourth Month—Fourth Weekly Meeting

INJURIES OF THE SPINE

FRACTURES, FRACTURE-DISLOCATIONS AND SIMPLE DISLOCATIONS OF THE SPINE

Classification—Bryant and Buck: Am. Practice of Surgery, vi.

1. Isolated Fractures of Spinous and Transverse Processes, and Laminæ: Frequency, location, diagnosis.
2. Fracture of Atlas and Axis: Pathology, symptoms, diagnosis.
3. Bilateral Isolated Dislocations: Location, pathology, diagnosis.
4. Unilateral Dislocations: Frequency, location, pathology, symptoms.
5. Isolated Fractures of Vertebræ: Pathology, diagnosis.
6. Complete Fracture-Dislocations: Pathology, symptoms.

SYMPTOMS OF FRACTURES OF THE SPINE IN GENERAL: Crepitus, deformity, unconsciousness, paralysis, anesthesia, pain, priapism, delirium, cystitis, bedsores, sphincters. Regional diagnosis, symptoms of injury to cord in cervical, dorsal and lumbar regions.

TREATMENT OF FRACTURES OF THE SPINE IN GENERAL: Expectant treatment. Reduction and fixation of bony points. Primary laminectomy. Secondary laminectomy. Indications for each; technic of laminectomy.

Monthly Meeting

SURGERY OF THE SPINE

Diagnosis and Treatment of Fracture-Dislocation of the Spine.
Early Diagnosis and Treatment of Tuberculosis of the Spine.
Etiology and Diagnosis of Scoliosis.

State Boards of Registration

COMING EXAMINATIONS

CALIFORNIA: Los Angeles, December 6-9. Sec., Dr. Charles L. Tisdale, 929 Butler Bldg., San Francisco.

DELAWARE: Regular, Dover, December 13-15; Homeopathic, Wilmington, December 13-15. Secretary of the Medical Council, Dr. H. W. Briggs, Wilmington.

KENTUCKY: Louisville, December 15-17. Sec., Dr. J. N. McCormack, Bowling Green.

MARYLAND: 1211 Cathedral St., Baltimore, December 13-16. Sec., Dr. J. McPherson Scott, Hagerstown.

OHIO: Cincinnati, December 6-8. Sec., Dr. George H. Matson, State House, Columbus.

PENNSYLVANIA: Regular and Homeopathic, Philadelphia, December 6-9; Eclectic, Harrisburg, December 6-9. Secretary of the Medical Council, Dr. Nathan C. Schaeffer, Harrisburg.

VIRGINIA: Lynchburg, Dec. 20-23. Sec., Dr. R. S. Martin, Stuart.

Reappointed on Vermont Board

Dr. W. Scott Nay, Underhill, and Dr. F. H. Godfrey, Chelsea, have been reappointed by Governor Mead as members of the Vermont State Board of Medical Registration for a term of six years. Dr. Nay is the secretary.

Rhode Island October Report

Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at Providence, October 6-7, 1910. The number of subjects examined in was 11; total number of questions asked, 70; percentage required to pass, 80. The total number of candidates examined was 12, of whom 9 passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Yale Medical School	(1908)	89.1; (1909)	90.7
Johns Hopkins University	(1908)		89.9
College of Phys. and Surg., Baltimore	(1909)	83; (1910)	80
Harvard Medical School	(1902)	81.2; (1909)	87.4
Tufts College Medical School	(1910)		86.2
Jefferson Medical College	(1910)		86.6
FAILED			
Baltimore Medical College	(1909)		72.2
University of Maryland	(1910)		78
University of Vermont	(1910)		69.5

Wyoming October Report

Dr. J. B. Tyrrell, Acting Secretary of the Wyoming State Board of Medical Examiners, reports the written examination held at Laramie, October 26-28, 1910. The number of subjects examined in was ten; total number of questions asked, 100; percentage required to pass, 75. Only one candidate, a graduate of the University of Louisville, 1910, was examined and he passed with a grade of 83 per cent. The following questions were asked:

PRACTICE OF MEDICINE

1. Define typhoid fever, rheumatism, appendicitis and cretinism. 2. Name the principal infantile contagious diseases and outline your treatment for one disease. 3. Mention diet for child 1½ years old as you would to mother or nurse that you were instructing. 4. What are the following skin diseases: eczema, prurigo, lentigo, herpes and urticaria? 5. Mention treatment for psoriasis, erysipelas and ringworm. 6. What are mania, melancholia and dementia? 7. Describe epilepsy and give treatment. 8. Give symptoms and treatment of bronchopneumonia. 9. Give diagnosis and treatment of gastric dyspepsia. 10. What is chlorosis? Give treatment.

ANATOMY

1. Give a careful description of the duodenum, stating length, caliber and openings into it. 2. If the femoral artery were obstructed at the apex of Scarpa's triangle, through what channels would the blood flow to reach the tibial arteries? 3. Describe the structure of the knee joint. 4. Name the twelve pairs of cranial nerves. 5. Describe a hair follicle. 6. Give the course and relations of the ureters in the male; also female. 7. Name the five muscles of the back of the leg. 8. What tissues of the abdominal wall are divided in the operation for appendicitis at (a) McBurney's point, (b) over the rectus muscle? 9. Describe the course and distribution of the nerves of the palm of the hand. 10. What is connective tissue and where is it found?

PHYSIOLOGY

1. Give the physiology of the ureter. 2. Describe the nervous mechanism of muscular contraction. 3. Describe the physiologic properties of bile. 4. Describe the physiologic differences between lymph and serum. 5. What is metabolism? How many kinds and what are the differences? 6. What is food? Classify and give functions. 7. Describe briefly nervous control of heart. 8. What are the principal physiologic functions of the skin? 9. Describe the physiologic function of the testes. 10. Differentiate between serous mucus and synovial membranes. Tell where each is found.

PATHOLOGY AND BACTERIOLOGY

1. Define anemia, hyperemia, leukemia, leukopenia. 2. Name the intestinal lesions of typhoid fever and give pathology of each. 3. Differentiate between carcinoma and sarcoma and give the diagnostic pathology of each. 4. Describe method of making the Widal reaction. 5. How do bacteria multiply? 6. Name the principal characteristics that would be present in a suspected culture if it contained typhoid bacilli. 7. What is tuberculin? 8. What is the difference between an antitoxic serum and an anti-infectious serum? 9. Give pathology of scorbutus. 10. Give pathology of catarrhal appendicitis.

CHEMISTRY AND TOXICOLOGY

1. What is sp. gr.? What is a urinometer? Give specific directions for its use. 2. Describe physical and chemical changes of substances. Give examples of each. 3. Define chemical symbols. For what are the following symbols: (a) Au, (b) Ag, (c) Fe, (d) As, (e) K, (f) Sb, (g) Zn, (h) Hg? 4. Write formula for (a) common salt, (b) hydrogen dioxid (c) carbonic anhydrid, (e) calcium sulphate, (f) boric acid. 5. Write about iron; occurrence in nature atomic weight, properties, and name several of the preparations used in medicine. 6. Write about alcohol; its occurrence, formation, properties and name some of the preparations used in medicine. 7. How is iodoform made and what are its properties? 8. Give symptoms, fatal period, fatal dose and treatment of phosphorus poisoning. 9. Give symptoms, fatal period, fatal dose and treatment of acid poisoning. 10. Give test for albumin; for sugar in urine.

SURGERY

1. Name the luxations of the shoulder joints. What symptoms are common to all shoulder luxations? 2. Give etiology and symptoms of intestinal obstruction. 3. How are hernias clinically divided? Give palliative treatment of reducible hernia. 4. How are amputations classified? What general considerations are imperative to observe to insure successful amputation? 5. What are the general indications in the treatment of all wounds? 6. Describe the postoperative treatment of a case of gangrenous perforative appendicitis. 7. What are the general considerations as to the treatment of gun-shot wounds? 8. Describe case of cellulitis of hand and give treatment. 9. What is the cause of varicose veins? How should you treat them? 10. Differentiate between location of foreign body in trachea, larynx and bronchus.

MATERIA MEDICA AND THERAPEUTICS

1. Give antidotes for poisoning by belladonna, corrosive sublimate, carbolic acid. 2. What are the physiologic actions and therapeutic uses of arsenic? 3. Give physiologic action of strychnin. In poisonous doses, how does death ensue? 4. What are expectorants? How classified? Differentiate between the classifications. 5. Name the principal purposes for which diuretics are used. 6. What is ergotism? Give physiologic effects and therapeutic uses of ergot. 7. Name two principal counter-irritants. For what purposes are counter-irritants used and on what rests the basis for their employment? 8. Write briefly concerning the methods of giving enteroclysis. What are the principal medicinal substances used and for what diseased conditions is enteroclysis indicated? 9. Give the physiologic actions of ipecac and its therapeutic uses. 10. What are the principal causes for failure in the use of bacterial therapy?

GYNECOLOGY

1. What is a caruncle of the urethra? Treatment? 2. Why is gonorrhea relatively a more grave disease in the female than in the male? 3. Is ventrofixation of the uterus ever justifiable? How is the operation performed? 4. Define plastic operations as applied to gynecology. 5. When would you use the curette? Give steps of the operation in detail. 6. Give physical signs of cancer of the uterus in the early stage. What laboratory aids to diagnosis, if any, would you resort to in confirming your physical signs? 7. Diagnosis, prognosis and treatment of uterine fibroids. 8. Give in detail the method to be used in making an examination of the pelvis. 9. State size, weight, measurements and location of normal virgin uterus. 10. Write about the menopause, and give significance of that period of a woman's life.

PHYSICAL DIAGNOSIS

1. Make drawing of the anterior osseous chest wall; show outline of the heart and thoracic aorta beneath. Indicate points covering the mitral, tricuspid, aortic and pulmonary valves. 2. State the significance of prolonged expiration. Auscultation in such a case would probably disclose what adventitious sounds? 3. Why are the apices of the lungs usually first affected in pulmonary tuberculosis? 4. Define cyanosis and give the various causes. 5. Define tachycardia; give significance. 6. What are hemic murmurs as applied to the heart, and what is the cause? 7. Name and describe the essentially different sounds given by the thorax on percussion. 8. (a) What is the cause of the second or diastolic sound of the heart? (b) What is the Corrigan pulse? Give significance. (c) Define pulsus paradoxus; intermittent pulse; dicrotic pulse; digeminal and trigeminal pulse. 9. Differentiate ascites and tympanites. 10. Give physical signs and causes of general anasarca.

OBSTETRICS

1. Describe briefly the female pelvis. 2. Give the successive changes that take place in the ovum after fecundation and during its passage to the uterus. 3. What is the umbilical cord and what are its uses? 4. Describe the fetal heart sounds, give their rate and state when and where they are best heard. 5. Write about morning sickness as to when it occurs, how long it continues, cause and treatment. 6. What is eclampsia? Give treatment. 7. Name several causes of abortion. 8. Give treatment for inevitable abortion. 9. Give list of articles needed by the physician during labor. 10. What are the dangers of a breech presentation? Why? Give treatment.

Book Notices

EDEMA. A Study of the Physiology and the Pathology of Water Absorption by the Living Organism. By Martin H. Fischer, Professor of Pathology in the Oakland School of Medicine, Oakland, Cal. Cloth. Price, $2 net. Pp. 209, with illustrations. New York: John Wiley & Sons., 1910.

This monograph, which was awarded the 1909 Nathan Lewis Hatfield prize of the College of Physicians of Philadelphia, is a consideration of the subject of edema and certain related topics, on the basis of the author's abundant and original investigations in certain principles of colloid chemistry. It is a well-known fact that certain colloids possess a great affinity for water, and take it up in large amounts until a condition of saturation is reached. The amount of water which will be taken up varies with the nature of the colloid, and also with the composition of the aqueous solution with which it is in contact; the latter is a very important consideration, as exhibited by such a phenomenon as the great swelling of fibrin when in slightly acidulated solutions. After a study of the influence of various substances dissolved in water on the amount of fluid which various colloids and also organized tissues will take up from such solutions, Fischer applies his results to the problem of edema. He concludes that the most important factor in the excessive accumulation of fluid in living and dead tissues is the development within these tissues of excessive quantities of acids, most commonly because of defective oxidation, the acid causing the colloids to have a much greater affinity for water than is normal. This hypothesis has the virtue of much originality and in many ways it is attractive—certainly it has not been adequately considered in the past, a defect which Fischer more than corrects. With great enthusiasm this principle is made to cover pretty much everything known concerning the presence of fluids in the tissues and secretions. Possibly Fischer is correct in this, but no physiologist or pathologist can read the work without finding many places where he meets with obstacles in applying the principle to the facts with which he is familiar. Undoubtedly the author also knows of these obstacles, and perhaps he can overcome them satisfactorily, but the critical reader would find the book much more convincing if he had done so while presenting his doctrine. There is no lack of originality and inspiration in this book, as exhibited especially in the discussion of the author's experiments on hemolysis and urinary secretion, and undoubtedly the monograph is well worthy of the prize it was awarded. Nevertheless, a more analytic discussion, and a more critical attitude toward his own arguments would, in our opinion, have been more creditable to the brilliant and enthusiastic investigator.

DIE SPINALE KINDERLÄHMUNG. Eine klinische und epidemiologische Studie. Von Dr. Eduard Müller, Direktor der Medizinischen Universitäts-Poliklinik in Marburg, mit Unterstützung von Dr. med. M. Windmüller, Assistenzärztin der Poliklinik. Paper. Price, 6 marks. Pp. 170, with 21 illustrations. Berlin: J. Springer, 1910.

This rather extensive monograph gives a complete description of the epidemiology, etiology, pathology and clinical features of acute anterior poliomyelitis as studied in an epidemic in the vicinity of Marburg. As a review of the entire subject it serves its purpose excellently, but as an original contribution it adds little to the advancement of this subject. By means of accurate reporting of all cases it was evident that the disease usually spreads by direct contact, but that in some instances it was carried by a third person, and in exceptional cases doubtful evidence seems to implicate the soil. The incubation period varied from five to ten days. The description of the clinical features of the disease is excellent. Depending on the epidemic the respiratory and gastro-intestinal types may be differentiated. The three cardinal symptoms of onset, the hyperesthesia, the hyperhydrosis and the leukopenia, form a triad that is practically never absent. Another symptom to which he calls special attention is the wakefulness at night and the soper during the day. Müller emphasizes particularly the so-called abortive cases, which he thinks are not very uncommon. The onset is just as in a typical case, but paralyses fail to develop. The reflexes are usually lost in one extremity or more. The importance of these cases lies in the fact that their true nature may not be recognized and that they may become the means of spreading the disease.

THE TAXONOMIC VALUE OF THE MICROSCOPIC STRUCTURE OF THE STIGMAL PLATES IN THE TICK GENUS DERMACENTOR. By C. Wardell Stiles. Hyg. Lab. Bull. 62, August, 1910. Paper. Pp. 72, with 134 illustrations. Washington: Government Printing Office, 1910.

Recent discoveries showing the importance of ticks as carriers of disease, not only to animals but also to man, have rendered careful study of the structure and habits of these pests of great significance for preventive medicine. In this bulletin Stiles considers the North American species, and finds that the microscopic structure of the stigmal plates is a taxonomic character of considerable importance, upon the basis of which the *Dermacentor* of this country can be divided into four groups. The Montana tick, which has been shown especially by the extensive studies of the late Dr. Ricketts, to be a means of transmission of Rocky Mountain spotted fever, is now found to be a distinct and new species (*Dermacentor andersoni*, according to Stiles), although it has been referred to in the literature of this disease as *D. occidentalis*, largely on the authority of Stiles himself. The tick which Salmon and Stiles considered identical with *D. reticulatus* of Europe is shown to represent a new species, *D. salmoni*.

In this connection some recent correspondence in THE JOURNAL (Oct. 29, 1910, p. 1574, and Nov. 26, 1910, p. 1910) from N. Banks and Dr. Stiles will be of interest.

DUST AND ITS DANGERS. By T. Mitchell Prudden, M.D., Author of "The Story of the Bacteria," etc. Second Edition. Cloth. Price, 75 cents. Pp. 113, with 6 illustrations. New York: G. P. Putnam's Sons, 1910.

This little volume of slightly over a hundred pages in its second edition still more forcibly emphasizes the important relation of dust to the transmission of bacterial diseases, and particularly tuberculosis. In its revised form it contains the latest knowledge concerning the bearing of dust on health, inculcates the duty of preventing or getting rid of dust in private homes, public places and the streets of our cities, and outlines methods of accomplishing this end. It also protests forcibly against the dangers of the spitting habit which is the prolific source, through dust, of the spread of tuberculosis. It is of value in the education of the laity in sanitary prophylaxis.

HANDBOOK OF REGIONAL ANATOMY. By Francis C. Ford, M.D., Professor of Anatomy, Head of Department of Anatomy and Senior Demonstrator of Anatomy in the Hahnemann Medical College and Hospital, Chicago. Cloth. Price, $1.50 net. Pp. 193. Chicago: Francis C. Ford, 1910.

This book is an attempt to supply to students or others a guide in anatomy to fill a place between the purely descriptive text of the larger anatomies and the applied anatomy of the surgeon or the diagnostician, and would perhaps be of assistance to the student in the dissecting-room. The descriptive portion, however, is so meager that it really amounts to a mere enumeration of the anatomic structures to be found in each region of the body, from periphery centralward. Mechanically, the book is not up to the standard of modern book-making.

OBSTETRIC NURSING, FOR NURSES AND STUDENTS. By Henry E. Tuley, M.D., Professor of Obstetrics, Medical Department, University of Louisville. Cloth. Price, $1.50. Pp. 246, with 72 illustrations. Louisville: John P. Morton & Co., 1910.

Revision makes this book more than ever a practical and serviceable guide for the obstetric nurse. Some of the pictures seem to be unnecessary; for example, that showing the use of the stethoscope in listening for the fetal heartbeat. The misspelling in Figure 7 is amusing; evidently the engraver, who did not know medical terms, did the best he could in reproducing the copy for the lettering. An index and a glossary aid in making the book valuable.

HISTORY OF CHEMISTRY. By Edward Thorpe, F.R.S., Author of "Essays in Historical Chemistry," etc. Two Volumes. Vol. II, from 1850 to 1910. Cloth. Price, 75 cents. Pp. 202, with 180 illustrations. New York: G. P. Putnam's Sons, 1910.

This is a continuation of Volume I of this work and discusses the more important discoveries in chemistry and the evolution of that science during the last half century. Considerable space is devoted to the most recent advances, especially in theoretical chemistry. The book contains several portraits of the more noted chemists of this period.

Medicolegal

Against Ordering X-Ray Examination—Admissibility of X-Ray Photographs in Evidence—Objective and Subjective Symptoms and Hypothetical Questions

The Supreme Court of Missouri, Division No. 1, says, in the personal injury case of Dean vs. Wabash Railroad Co. (129 S. W. R. 953), that the defendant company filed a motion asking the trial court to order that the plaintiff submit himself to an examination by a disinterested surgeon whom the court should select, and also that he submit to have *x*-ray photographs made of his alleged injured parts. The motion was sustained to the extent of the surgical examination, but overruled as to requiring the plaintiff to submit to the *x*-ray photograph process, because the court was advised that sometimes the subjecting of a person to that process resulted in danger to him. There was no error in that matter.

Two *x*-ray photographs offered in evidence by the plaintiff were taken by a physician who testified that he owned an *x*-ray machine and was familiar with its use and operation; that he examined the plaintiff with it, taking observations of both hips. After taking the negatives with his *x*-ray machine, he took them to a photographer and had the pictures developed; the operation of developing and printing the pictures was done by the photographer under the supervision of the witness who understood the art, and that the pictures were correct photographs. The witness further explained that it was the bone that caused the shadows in an *x*-ray photograph, and pointed out certain parts of one of the pictures which showed the enlargement of the upper part of the right thigh bone, testifying that that indicated a fracture near the base of the great trochanter of the femur.

It was not error to admit those photographs in evidence. Even on the theory of the defendant that such a picture is, in itself, not evidence, but only serves as a memorandum to assist the expert witness in his explanation, the pictures were properly admitted in evidence, and were used to illustrate the scientific explanation of the witness. The art of making photographs of the bones of a living man by use of the *x*-ray is yet still more in the keeping of science than the art of common photography, but that fact only requires more care in laying the foundation for the introduction of such photographs; it does not exclude them from evidence.

The defendant called some expert witnesses and propounded to them hypothetical questions based on certain objective symptoms which some of the witnesses testified they had found on physical examination of the plaintiff and on certain facts to which witnesses testified, and asked the expert witnesses their opinions as to the injury the plaintiff had received based on those symptoms and facts. On cross-examination the plaintiff's attorney supplemented those hypothetical questions by asking the witnesses to take into consideration, also, certain subjective symptoms to which the plaintiff had testified, and then give their opinions based on the whole case; that is, the symptoms and facts contained in the defendant's questions, together with those supplemented by the plaintiff's questions. The defendant objected to the questions on the ground that subjective symptoms should not be taken into account. There was no error in overruling the objection.

Objective symptoms are those which the surgeon discovers from a physical examination of his patient; subjective symptoms are those he learns from what his patient tells him. When a surgeon has no cause to suspect untruth or delusion, he takes what his patient says and weighs the subjective symptoms with those he has discovered and on them he bases his diagnosis and proceeds to his prescription.

Why should not a surgeon when he is called as an expert witness, and asked his opinion on a hypothetical case, take into account the same character of facts that he would when called to attend a suffering patient? Objective symptoms are no more realities than subjective symptoms if both are true. Objective symptoms depend for their proof as much on the candor and capability of the witness testifying in regard to them as do subjective symptoms; a witness testifying to an objective symptom is as liable to be mistaken as one testifying to a subjective symptom and perhaps more so. An opinion given in answer to a hypothetical question is based on an assumption that the facts supposed are true, but at last it is for the jury to find from the evidence whether the supposed facts are proved; if the jury find that the facts are not proved they will disregard the opinion based on them.

If a physician is testifying as to the condition of a patient whom he has examined, then it is proper to draw a distinction between the objective and the subjective symptoms, but when he is asked for an opinion on a hypothetical case, he must assume the truth of the one as well as that of the other.

Cancer Hospital May be a Nuisance in Residence Neighborhood

The Supreme Court of Kansas approves the injunction which was granted in the case of Stotler vs. Rochelle (109 Pac. R. 788).

The suit was brought to enjoin the establishment, in a residence neighborhood, in a building formerly used as a dwelling house, of a hospital for the treatment of patients afflicted with cancer. The home of the plaintiff was 78 feet from the main building which it was proposed to use as a hospital. The two houses faced in the same direction, and each had a number of windows looking toward the other. Two other residences were situated about 90 feet from the hospital building, and three others at a distance of about 150 feet.

Witnesses for the plaintiff who were familiar with real estate values testified that in their judgment the establishment of the hospital would cause a material depreciation in the rental and market value of the surrounding property. Several physicians expressed the opinion that there would be some danger of the communication of the disease through transmission by means of insects, and perhaps in other ways. There was also evidence that offensive odors resulting from the disease itself and from disinfectants used on account of it might reach the occupants of neighboring dwellings. On the other hand, there was testimony on behalf of the defendants that none of the anticipated evils had resulted from a cancer hospital formerly maintained by them under somewhat similar conditions; that under proper management there need be no offensive odors about such a place, and that cancer is not contagious or infectious.

Perhaps the court may take notice of the prevailing view in the medical profession on the last proposition. From the current literature of the subject it appears that while it has not been proved to the satisfaction of the profession generally that cancer can be communicated from one individual to another except by the process of grafting or transplanting cancerous tissue, competent investigators are not lacking who believe that it is of parasitic origin and in some degree infectious. That theory is presented and argued at length in an address published in the *Lancet*, January 11, 1908, to which is appended a bibliographic note. Results of experiments tending to support the theory are recorded in the issues of June 5, 1909, and April 9, 1910. An article in the same publication (Dec. 4, 1909, pp. 1709-1711) describes observations made in Paris covering a period of two years and a half, which lend color to the popular belief in the existence of "cancer houses;" that is, houses the occupants of which are peculiarly subject to cancer. In the present state of the accurate knowledge on the subject, it is quite within bounds to say that, whether or not there is actual danger of the transmission of the disease under the conditions stated, the fear of it is not entirely unreasonable.

It is of course not necessary that the use to which property is put shall be unlawful in itself in order to constitute it a nuisance in the eye of the law. Whether in a given case the obligation so to use one's own property as not to injure another's has been or is about to be so far transgressed as to justify the interference of a court is a question to be deter-

mined as a matter of reason, fairness, and justice under all circumstances. The injury need not extend beyond annoyance, if in view of all the facts, it is unreasonable. For instance, offensive odors, although not injurious to health have often been held to constitute sufficient ground for injunction.

The question was not whether the establishment of the hospital would place the occupants of the adjacent dwellings in actual danger of infection, but whether they would have reasonable ground to fear such a result, and whether, in view of the general dread inspired by the disease, the reasonable enjoyment of their property would not be materially interfered with by the bringing together of a considerable number of cancer patients in this place. However carefully the hospital might be conducted, and however worthy the institution might be, its mere presence, which would necessarily be manifested in various ways, would make the neighborhood less desirable for residence purposes, not to the oversensitive alone, but to persons of normal sensibilities. The court concludes that on these considerations the injunction asked for was rightfully granted. The establishment of a cancer hospital in a residence neighborhood in near proximity to dwellings may be enjoined at the instance of one owning and occupying adjacent property.

Physicians Excepted from Missouri Medical Practice Acts

The St. Louis Court of Appeals says, in State vs. Hellscher (129 S. W. R. 1035), that the act of 1901, in so many words, was limited to those who should thereafter practice who had not theretofore registered. Those who had theretofore been duly registered were excluded from the law. In other words, this statute, as originally enacted in 1901, did not create a general offense on the part of all who should thereafter practice, but created an offense limited to a particular class of persons; that is, those who had not been theretofore registered, who should thereafter practice without first registering with the State Board of Health. The law related to acts committed by those particular persons only, to those thereafter practicing medicine or surgery who had not theretofore been licensed as provided by law.

This court does not think that the amendment made by the act of 1907 in any manner changed this phase of the law, nor made it any the less part of the enacting clause, notwithstanding the fact that what was before in the body of the enacting section or clause now appears as attached to that clause by way of a proviso. Changing the position of the words did not change the law. Looking at what the general assembly was attempting to do and considering the matter and phraseology of the amendment of 1907, it is obvious that this arrangement was more for the purpose of avoiding awkwardness of expression, than with any intent of change in the object of the law itself, and the mere fact that what had before been in another place in the enacting section (namely, the phrase "except physicians now registered") is transposed, and appears under the designation of a proviso, has not had the effect of eliminating the words from the enacting clause itself.

It is still the intention of the act regulating the practice of medicine and surgery that its operation shall apply only to those who had not been licensed or registered as physicians or surgeons prior to March 12, 1901. Obviously the legislature, by the amendment of 1907, did not intend to invalidate the registration and licenses of physicians and surgeons who had been regularly licensed and registered under the laws prior to March 12, 1901, the date of the approval of the act of 1901, any more than it had by the act of March 12, 1901, made its provisions applicable to those who had registered as physicians or surgeons prior to that date.

Another reason for the insertion of this limitation at the end of the section, instead of leaving the exception as in the original section, may have been that, as new prohibitions were inserted by the amendment, the lawmakers did not intend to leave any doubt that those new requirements were not to be made of the old physicians.

Society Proceedings

COMING MEETINGS

Southern Surg. and Gyn. Assn., Nashville, Dec. 13-15.
Western Surg. and Gyn. Assn., Chicago, Dec. 19-20.

SOUTHERN MEDICAL ASSOCIATION

Fourth Annual Meeting, held at Nashville, Nov. 8-10, 1910

(Continued from page 1920)

Inguinal Hernia

DR. JOHN SMYTH, New Orleans, reported three cases. The sac in the first case was probably a variety of the pantaloon sac. This kind of sac may account for some of the failures to cure hernia by operation. The condition in the second case was evidently the result of a failure securely to close the neck of the sac in a previous operation. The condition in the third case was the result of an effort at reduction of the hernia, in which the position of the testis was lost sight of or ignored. The truss applied at that time caused sufficient traumatism to produce adhesions which imprisoned the testicle in the upward reflection of the sac, and the enterocele, or hernia proper, recurred in the lower peritoneal pouch, possibly another case of pantaloon sac.

DISCUSSION

DR. DUNCAN EVE, Nashville: The success of all operations for the relief of hernia depends on obliteration or removal of the sac, and the transplantation of the cord to the new bed or canal.

DR. C. W. ALLEN, New Orleans: In a case of double inguinal hernia I completed the operation on the side where the sac was; I had transfixed the sac and proceeded to the other side; when I got to the sac there was a gush of blood. The blood came from the abdominal cavity. I knew I had not injured the deep epigastric artery on the other side, but something was wrong. I put the forceps on the side I was then operating on, went back, opened up the hernia on the other side, and found that the ligature had slipped, and the hemorrhage was coming from the small vessel in the sac. We closed the sac and evacuated the blood in the cavity. That is the only time this has happened to me.

DR. J. L. CROOK, Jackson, Tenn.: The reason we do not operate more frequently for hernia is that we are perhaps negligent in pointing out to our patients the necessity of it. Men wear trusses for years when a simple operation with a very low mortality would make them practically perfect men physically.

DR. ROBERT CALDWELL, Nashville: It is not so much the removal of the sac *in toto* as it is the treatment of the exudate about the neck of the sac. Ochsner, of Chicago, was the first to advise simple treatment of the neck of the sac of a femoral hernia and he got results that were almost perfect. We are going to have recurrences whether we use the Bassini, the Ferguson, or the Macewen method, because we have to deal with different conditions. I do not see why we should transplant the cord instead of allowing it to stay in place, treating the neck of the sac properly, and supporting the internal ring, if necessary constricting that so as not to invite subsequent hernia. I do not see why in routine work we should still do the Bassini.

DR. WILLIS C. CAMPBELL, Memphis: In all cases at the New York Hospital for Ruptured and Crippled, a plaster spica is applied after the operation which immobilizes the parts absolutely and gives opportunity for quicker healing and leaves practically no dead spaces.

DR. CHARLES A. ROBERTSON, Nashville: Why are we not more frequently called on to operate on hernia? The reason for it lies in the fact that fitting trusses is largely in the hands of instrument dealers and druggists, who make false claims in regard to the permanent or curative value of the truss. It is a sad commentary on our profession that we have allowed these cases to get out of our hands and go primarily for treatment to men of this class, and I suggest that it is our duty to discourage patients from going to these men, aud to urge on them the necessity of operation.

DR. W. D. SUMPTER, Nashville: The operation can be performed under local anesthesia with comparatively little pain. If local anesthesia were resorted to more frequently more men would be operated on for the relief of this condition who fear a general anesthetic.

DR. PAUL DEWITT, Nashville: There is no doubt that the operation for the radical cure of hernia can be performed just as completely under local anesthesia as under general anesthesia. I have yet to find a patient who suffered any amount of pain during the operation.

Operative Treatment of Fractures

DR. C. W. ALLEN, New Orleans: The view of operating on all fractures will never become universally adopted. A more conservative middle ground seems the wiser, and to this group most conservative surgeons belong. We learn from the study of the after-condition of fractured limbs that a timely operation could have done much toward improving the functional usefulness of many of them. A general anesthetic is demanded for the proper reduction of all fractures, except the simplest. All fractures after reduction should be skiagraphed, and it is often found that what was thought to be a well-reduced fracture, proves to be far from satisfactory. In many cases reduction is possible, but cannot be maintained owing to the obliquity of the line of fracture. When reduction is impossible operation should unhesitatingly be performed and one frequently finds on operating on such cases that the interposition of soft material would have made reduction impossible by any other than operative means. The time for operation calls for some judgment. In cases seen early, within the first twenty-four hours, when there is not much injury to the soft parts, operation had best be done at once. When there is extensive injury to the soft parts, or when several days have elapsed before first seeing the patient, delay should be advised until the local inflammation subsides, sometimes about the second week, when there will be less danger of infection. I think far too many limbs are needlessly cut off. With a little hard work and some ingenuity on the part of the surgeon many badly mangled limbs can be saved. So long as the blood-supply is sufficient to keep alive the peripheral parts there is a chance. It is better that such patients spend six months in a hospital and walk out sound and able to make a living than to be discharged after three weeks with the loss of a limb, and spend the rest of their lives as hopeless cripples or helpless charges on the community.

DISCUSSION

DR. W. P. MCADORY, Birmingham: A number of years ago I had a negro patient who was shot through the middle of the femur. I kept the limb in extension for five weeks, at the end of which time I found that I had an ununited fracture. I cut down on the seat of the fracture and found the bullet interposed between the ends of the bone. I resected both ends of the bone, wired the fragments, and succeeded in giving this man a useful limb.

DR. H. A. ELKOURIE, Birmingham: I would rather cut down on the bone and fix or wire the fragments together than trust to hypothesis and get bad results.

DR. A. G. PAYNE, Greenville, Miss.: In compound fractures it is best to operate, open up thoroughly, use phenol, tincture of iodin, peroxid of hydrogen, or bichlorid of mercury, but be sure the wound is thoroughly clean. Any mechanical device you may see fit to use to hold the fragments in position will work if you are clean about it.

DR. MICHAEL HOKE, Atlanta: As an orthopedic surgeon I am called on to correct many deformities the result of badly united fractures. There are many things in the books on fractures that are absolutely wrong. For instance, if the practitioner puts up a fractured elbow joint in the position of flexion and does not incorporate the shoulder, he cannot control the upper fragment, the shaft of the humerus. Similarly, if he has a fracture of the forearm he cannot control the fragment unless he locks that up by putting it straight.

DR. JOHN SMYTH, New Orleans: I must differ with those who want to operate in every case. I think that would be a mistake. I have under treatment a young girl who sustained a fracture of the humerus about an inch and a half above the elbow joint, supracondyloid, in which case the upper fragment goes backward and the lower fragment is tilted forward. These fractures were put up in flexion, with a weight on the elbow joint, after the suggestion of Lovett and Stimson. After repeated examinations with the Roentgen ray apposition was found very good, and after eleven days the splint was taken off, the arm massaged a little, and a light plaster splint reapplied. The girl will not only have a good functional result but a good cosmetic result.

DR. ROBERT CALDWELL, Nashville: I believe that operative treatment of compound fractures should be the rule and non-operative treatment the exception. Of course, much will depend on the character of the fracture. If we have a transverse fracture, we know that if we reduce it, it is comparatively easy to maintain it in position and we secure good results by non-operative treatment; but if we have an oblique fracture, or a spiral fracture, although we have secured reduction, it is difficult to maintain it; consequently knowing the comparative rarity of a true transverse fracture, we would say that operative treatment should be the rule and non-operative treatment the exception.

DR. DUNCAN EVE, Nashville: Until recently we were very well satisfied with firm union. We did not think much about the question of permanent results, but since our ideal has been raised by the Roentgen ray we not only insist on a good functional result, but also on a cosmetic one. While I am not opposed to the operative plan of treatment of fractures, I am not modern enough yet to suggest that all closed fractures should be treated by the open method. In compound fractures this method is all right because you have an open wound. Also for those fractures which cannot be reduced, or which when reduced, will not remain in coaptation; but the time has not arrived when surgeons will generally accept the open method as an every day plan for the treatment of closed fractures.

DR. E. DENEGRE MARTIN, New Orleans: The first and most important thing is to know the character of the fracture, and above all the anatomic structures involved. If you have a simple transverse fracture, you are a poor surgeon if you cannot reduce it and hold it in position. If you have an oblique fracture, due to torsion, you are dealing with contraction of certain muscles and you will have trouble in holding the fragments in apposition and you must overcome the action of the muscles if you would get good results.

End Results of Surgical Operations on Nervous Women

DR. S. T. RUCKER, Memphis: Nervous women, as a rule, do not make good subjects for surgical operations. An operation should not be undertaken unless there is a definite, unmistakable pathologic lesion, and it is the chief cause of the nervous symptoms. A correct estimate of the end-results of surgical procedures cannot be made, unless the surgeon keeps in touch with his patients for months after they return home. In clearing up diagnoses in obscure conditions, every surgeon should seek the aid of a competent internist, neurologist, and pathologist. When a patient presents herself, she seeks relief from suffering. She is not especially anxious to be cut, but to be cured, and the surgeon should always ask himself the question: If this were my wife, or my daughter, would I advise an operation?

DISCUSSION

DR. A. A. HEROLD, Shreveport: I recall distinctly the case of a woman who was operated on four times; first, for a retrodisplacement of the uterus; second, for the removal of one or both ovaries; third, for the removal of the appendix; fourth, for the removal of a kidney. Finally, she was transferred to the neurologic department, and what became of her after that I do not know.

DR. GEORGE R. LIVERMORE, Memphis: A man came to me for diagnosis and possible operation for kidney-stone. He gave obscure nervous symptoms, with violent pain in the right side. The diagnosis of appendicitis had been previously made by another physician. He was operated on and his appendix removed; but the pain was just as severe as before. Then a diagnosis of gall-stones was made by a surgeon in Cincin-

nati, who operated for that condition. No gall-stones were found. The gall-bladder was drained, and the pain was just as severe after this operation as before. I thought his condition was more hysterical or neurasthenic than otherwise. Uranalysis was negative. He had never passed any calculi. Roentgen-ray examination showed no stone in the kidney, nor shadow anywhere, and so I refused to operate, and advised him to consult a neurologist.

DR. J. A. CRISLER, Memphis: I recall the case of a physician who had all the evidences of neurasthenia, including genuine hysteria, and who had the notion that he had a bad gall-bladder and a bad appendix. I refused to operate on him. He went to every surgeon in Memphis. He then went out of town to consult another surgeon, who removed his appendix and drained his gall-bladder, and he has since been perfectly well. We might cite these cases one after another and prove, on the other hand, that surgery was indicated.

Surgical Treatment of Hepatic Cirrhosis

DR. ARTHUR A. HEROLD, Shreveport: I believe that all well-marked cases of atrophic cirrhosis of the liver should be advised to submit to surgical procedure. I do not consider the results obtained, on the whole, brilliant; but I do not believe that a failure to benefit one of these cases by operation will injure the reputation of either the surgeon or of surgery.

Why Ligate the Sac in Hernia?

DR. H. A. ELKOURIE, Birmingham: I have done within the last six years twenty-two herniotomies without removing the sac. There has not been a single recurrence.

Coxa Vara

DR. WILLIS C. CAMPBELL, Memphis: The diagnosis is not difficult. As a rule, no medicinal measures are indicated, but thyroid extract deserves a trial. In patients of moderate size a simple stilting abduction brace should be used until the bone is firm, when an osteotomy can be done below the lesser trochanter by any of the various methods, and the extremity held in abduction and internal rotation by a plaster spica, including the foot below and extending to the nipple or axilla above. I do not believe that a brace would be satisfactory in a fat subject such as my patient is, but when further reduced we may be able to use any desirable method. At present the patient is in a plaster spica extending to the nipple line, and the extremity held in as much abduction as possible. The condition has probably been present for one year, and at the expiration of two more years a corrective osteotomy can be done with excellent functional result if there is no further change visible by the Roentgen-ray; otherwise we must wait until the process is stationary. In the meantime, I shall apply successive plaster spicas with forcible abduction and internal rotation, which may restore the angle sufficiently to give perfect function.

Purgatives with Pain in the Abdomen

DR. C. N. COWDEN, Nashville, Tenn.: There is no place for the administration of a purgative with pain in the abdomen unattended by a diarrhea.

The patient's danger lies not in the fact that the bowels do not move, but in the condition that produced the pain and obstruction, and the administration of purgatives of any kind under these circumstances is not only irrational, but is productive of the greatest harm to the patient. He does not get well because you force his bowels to move, but in spite of the effect of your drastic measure. Why not be rational in the treatment of these cases and meet the indications with remedies or measures that are indicated and not by the indiscriminate use of purgatives?

Human and Bovine Bacilli from Isolated Cases of Cervical Adenitis

DR. WILLIAM LITTERER, Nashville: Eleven consecutive cases of primary tuberculous cervical adenitis were studied, which resulted in the isolation of five cultures of *Bacillus tuberculosis* of the *typus humanus*, and six cultures of the *typus bovinus*. The classification of the types was made on the basis of four tests: First, the morphologic characters of the cultures; second, the dysgenetic or eugenetic characters of the cultures; third, the relative virulence toward rabbits, and, fourth, the reaction curve in 5 per cent. glycerin bouillon. This latter test serves admirably to distinguish between the two types, provided careful control tests be adhered to rigidly. I have found the differences in the growth of the two types, dysgenic and eugenic, on Dorcet's egg medium to be very valuable in differentiating one type from the other. Rabbit virulence has probably been more uniformly satisfactory than any other of the tests in determining the differences between the two types of bacilli. In gathering up the clinical data of the eleven cases, I was unable to discern a single feature of distinction between those persons who harbor the human type of bacillus, and of those who were infected with the bovine type. The only striking difference observed was the result procured from the administration of tuberculin. In order that uniformly satisfactory results be obtained from the therapeutic administration of this agent, it is imperative that the nature of the type of infection be determined, so that a corresponding strain of tuberculin be employed.

The Gamete Carriers

DR. GRAHAM E. HENSON, Crescent City, Fla.: Until such a time as a campaign of enforced screening of all homes and public meeting places has been generally effected, it is imperative that in addition to the proper treatment of patients showing acute clinical manifestations of malaria, some means be devised to corral all chronic gamete carriers that either have frequent recurrences or possibly only after long periods of time, and that they be kept under treatment long enough to destroy all parasites they may be harboring.

Carbonic Acid Baths in the Treatment of Heart Diseases

DR. J. H. HONAN, Bad-Nauheim, Germany: Carbonic acid baths have been used in cardiac diseases for over fifty years, and in all this time there has ever remained the question of their physiologic action. In all of my cases, with a pulse above normal, I have observed a slowing, and in but one case an increase. This was a very nervous man with a pulse of 60 and a subnormal temperature of 36.5 C., and blood-pressure of 140. In this patient I observed an increase of eight beats after an immersion of six minutes. In this action the baths resemble very much the digitalis group. If the high pressure is due to a poisonous irritation in the blood stream, the carbonic acid baths, by their action of increased elimination, soon rid the blood of the toxic elements. In the blood tests which I have made there has in a large percentage been found an increase in the hemoglobin, and a better developed red blood-corpuscle. The pulse is a good indicator to guide in the treatment and the duration of the baths. The results of my clinical studies convince me that carbonic acid baths in most cases reduce high blood pressure, raise low blood pressure, increase the pulse volume, increase elimination, increase pulse amplitude, increase heart energy, increase duration of temperature, reduce peripheral resistance, reduce dilatations, and relieve nervous irritability.

Infant Feeding

DR. MARGARET O. DAVIS, Nashville, brought out some points regarding the differences in human and cows' milk in infant feeding, the care of feeding utensils, etc. She emphasized the necessity of pure milk, and its preference to the use of drugs in some cases. The predisposition to disease of poorly-fed children was touched on. She emphasized the need of certified milk in cities.

Cardiorenal Treatment

DR. J. B. GUTHRIE, New Orleans, spoke of the use of digitalis in heart diseases. He withholds a salty diet in cases of dropsy, which assists the patient in enduring the thirst, and makes easier work for the heart. Measure of the urine is the gauge of treatment, and rest, dry salt-free diet and purgation give

as striking a change as we see with the addition of digitalis. He recommends purgatives of strong salines or jalap in dropsy cases. In acute dilatation he recommends venesection, as well as the use of opiates to insure rest. He emphasizes the necessity of treating the heart muscle, even when the kidney or vessels are first affected, that is, to lighten the labor of the heart muscle by depleting measures, purgatives, diuretics, if the kidney is sound, rest in bed, when possible, by use of opiates if there is distress, and by the reduction of drinking fluids. Digitalis may be given to prolong the rest period of the heart-beat.

Double Perforation in Typhoid Fever

DR. E. M. FOLKES, Biloxi, Miss., reported two cases of perforation following typhoid fever. One patient died eleven days after a successful operation for the closure of the perforation. The diagnosis in this case was made early, and operation performed promptly.

The names of the new officers elected were given in THE JOURNAL Nov. 19, 1910, p. 1819.

TRI-STATE MEDICAL ASSOCIATION OF MISSISSIPPI, ARKANSAS AND TENNESSEE

Twenty-Seventh Annual Meeting, held at Memphis, Tenn., Nov. 15-17, 1910

The President, DR. J. S. RAWLINS, Dancyville, Tenn., in the Chair

Officers Elected

The following officers were elected for the ensuing year: President, Dr. J. W. Barksdale, Winona, Mississippi; vice-presidents, Dr. John Darrington, Yazoo City, Miss.; Dr. Robert P. Nall, Armorel, Ark.; Dr. Arthur G. Hudson, Rein, Tenn., secretary, Dr. Eugene Rosamond, Memphis (reelected); treasurer, Dr. J. A. Vaughan, Memphis (reelected).

Memphis was selected as the place for holding the meeting in 1911.

Injection Treatment of Infected Joints

DR. M. G. THOMPSON, Hot Springs, Ark.: A boy, 19 years of age, had had gonorrheal arthritis which resulted in ankylosis of the right knee of eleven months' duration. Under local anesthesia a needle was thrust deep enough to enter the capsule. No synovial fluid escaped, but an injection of liquor formaldehydi in glycerin was made. The next day the knee was more painful. The patient had some fever and was very much depressed mentally, but he was assured that in a day or two he would have a general anesthetic and the breaking up of the adhesions. On the fourth day this was done, and after breaking up the adhesions and flexing the knee, the needle was thrust into it at the same point and at the same depth as at first, and the synovial fluid ran out freely. The injection of the formaldehyd-glycerin fluid was then made, and the knee flexed several times. This flexion relieved the pain very much. In two weeks he could walk, and the knee had returned almost to its normal size.

DISCUSSION

DR. BERNARD ASMAN, Hot Springs, Ark.: I have treated twelve or fifteen cases by this method and satisfactory results have been obtained in all. In some the relief was more prompt and more complete than in others, but in none were there any untoward results observed. An important point in regard to the formaldehyd-in-glycerin solution is that it must always be made up at least twenty-four to forty-eight hours before the time of using.

DR. JOHN L. JELKS, Memphis: Ten years ago I maintained that infections by the staphylococcus and by the tubercle bacillus could be controlled with formaldehyd solution. I also pointed out that formaldehyd solution would destroy the gonococcic infection of the urethra within two weeks.

The After-Care of Anterior Poliomyelitis

DR. WILLIS C. CAMPBELL, Memphis, reported four cases of the disease, and in recapitulation said: The spine should be immobilized during the period of muscular excitability, as we would any acutely inflamed joint with muscular spasm. The anatomic relation of the joint surfaces should be maintained to prevent deformities from muscular contraction. Deformities, when present, should be corrected by surgical procedures. Massage and electricity are dangerous measures in inexperienced hands. Light braces, which should maintain the parts in correct position. Operative measures give brilliant results in well selected cases. Rarely can a perfect functional result be obtained, but all can be benefited materially.

DISCUSSION

DR. G. G. BUFORD, Memphis: Anterior poliomyelitis is not confined to infants alone. It has been my experience to find nearly as many cases of this disease in adults as in infants. The etiologic factor in the production of anterior poliomyelitis is an inflammatory condition in the anterior horns of the spinal cord. There are three classes of inflammatory conditions. An exudate is present in all. In one class the exudate is absorbed and those patients get well. In others it is not absorbed. In still other cases the cells are involved, and a paretic condition follows. In the adult cases an infection results from anything which will produce a toxin.

DR. W. T. PRIDE, Memphis: Anterior poliomyelitis is an infection, and as typhoid selects the intestinal glands, so the infective organism of anterior poliomyelitis selects the ganglion cells, especially the giant cells, of the anterior horns of the spinal cord. There are those who believe that heat has a great deal to do with the development of the disease. Operation in a great many cases is satisfactory. By transplantation of the tendons a useless arm or useless leg has been made partially useful. Various orthopedic apparatus are useful. When the case is diagnosed early and paralysis has occurred, the general practitioner should send the patient to an orthopedic surgeon.

DR. W. L. WADLINGTON, Memphis: I have had under my observation for the last two months a woman three months advanced in pregnancy. The trouble began with fever and an acute toxemia, resulting in complete paralysis of the body. There has been a partial recovery from the paralysis in the upper limbs, but not in the lower. I am waiting with much interest for delivery in this case to see what the outcome will be.

DR. W. C. CAMPBELL, Memphis: In New York they have done a great deal by immobilizing the spine in the acute stage and in keeping the patients quiet. The deformities which result from anterior poliomyelitis should be corrected as soon as possible. We see comparatively few deformities from this disease in the clinics of America as compared with those seen in London and Vienna.

Anxiety Neuroses

DR. S. T. RUCKER, Memphis: Anxiety and worry are distressing symptoms in many of the so-called neuroses, but are most common and constant in neurasthenia, hysteria, melancholia, and psychasthenia. In many cases of hysteria, anxiety and worry are annoying symptoms. The patient may constantly refer to some sensation which she interprets as an incurable malady. One patient, whose appetite and digestion were good, complained incessantly that she had an incurable stomach trouble. Another patient had a morbid fear of dying. In melancholia and psychasthenia, anxiety takes the form of a fixed obsession or hallucination, and its manifestation is often distressing to witness. One of my patients would walk the floor crying and displaying great agitation over the belief that she had brought financial ruin to her family. When anxiety and worry are symptoms in the illness of patients, there is no drug or remedy that will take the place of psychotherapy. The physician who has the ability to put his patient in a cheerful frame of mind and fix the belief that he will recover has at his command a most effective therapeutic procedure.

Bacterial Vaccines, a Factor in Therapeutics

DR. WILLIAM LITTERER, Nashville: In no instance have I failed to observe improvement in any mixed tuberculous affection. I would encourage the use of vaccines as an adjunct

to medical and surgical procedures in certain types of infections which up until now have stubbornly resisted all curative measures. In every instance a sinus or fistula of long standing, whether tuberculous or not, should be given the benefit of vaccine therapy. Autogenous bacterines should be used when possible. Stock vaccines are uncertain. In every case of mixed tuberculosis (pulmonary or otherwise) beneficial results have been obtained by employing the autogenous vaccines and tuberculin.

Surgical Treatment of Goiter

DR. W. T. BLACK, Memphis: Thyroidectomy is the usual procedure in hyperthyroidism, but in cases with symptoms of beginning hyperthyroidism, or where the symptoms are not severe enough to warrant a thyroidectomy, ligation will often cure the patient. It is also indicated in every acute case, and in chronic cases which have resisted other forms of treatment, and in which there are secondary changes in other organs. Ligation may be performed either under general or local anesthesia. The ligation of the upper poles has met with satisfactory results in a limited number of cases. I believe if we study the mental as well as the general condition of our patients, and operate oftener by ligation as a preliminary measure, we will reduce to a minimum the risk these patients run.

DISCUSSION

DR. B. F. TURNER, Memphis: Surgery of the thyroid gland involves one other branch of medicine which heretofore has been frequently overlooked. The effect of hyperthyroidism as a cause of dementia has not received the attention that it deserves. Alienists are beginning to recognize that here and there is a patient who is a proper subject for the surgical infirmary rather than for the detention house for the insane. The operations that have been performed on this class of cases have given satisfactory results. I wish to emphasize the necessity of consulting a surgeon with reference to the possible existence of hyperthyroidism and its correction by operation in those cases in which some form of mental derangement would seem to suggest the advisability of incarcerating a patient in an insane asylum.

(To be continued)

PHILADELPHIA COUNTY MEDICAL SOCIETY

Meeting Held Oct. 12, 1910

The President, DR. HENRY LEFFMANN, in the Chair

SYMPOSIUM ON FOOD IN HEALTH AND DISEASE

DR. JOHN MARSHALL spoke on the "Chemistry of Foodstuffs."

Food in Health

DR. W. E. ROBERTSON: Food in health is a subject that receives too little attention from the physician. Dietetic errors in the direction of quality and quantity are probably responsible directly for much of the minor ill health with which the doctor has to deal; and indirectly, by lowering the body resistance, inviting the development of acute infections, or that which is more serious, metabolic disease. Foods may be discussed very broadly as nitrogenous and non-nitrogenous, and according to their nutritive constituents as proteins, carbohydrates and fats. Proteins we regard as tissue-builders and repairers of waste tissue. Carbohydrates and fats produce energy, and both, but especially the carbohydrates, are regarded as protein sparers. I consider the total amount of food requisite to furnish about 3,500 calories per day, the amount generally agreed on as being essential for the average worker. I would commend especially a nut diet as being both economical and furnishing a high food value.

Food in Disease

DR. M. HOWARD FUSSELL, Philadelphia: I believe that in the vast majority of cases which a physician is called to attend, nursing, proper food, and fesh air are of much more importance than drugs. The food prescribed in disease must be of such a character that it will not embarrass the already weakened powers of digestion. On the other hand it is just as important that the food contains sufficient calories for the maintenance of nourishment. The chief value of beef-tea or other broth without albuminous matter, is in the mental effect which such foods create and the water and salts which they contain. Water should be administered regularly to patients who are ill enough not to ask for it. When practicable the caloric value of the food we administer to our patients should equal that of a diet of health, an average of 2,500 calories daily being about the necessary amount. With patients suffering from typhoid I now add to the diet soft eggs, soft toast, cereals well cooked, very finely minced meats of various kinds.

DISCUSSION

DR. JAMES TYSON: The only condition under which food acids can be harmful to gouty patients is their excessive use so as to overwhelm the stomach contents with acidity. Regarding the use of red and white meats, it is much worse for the patient to take half a pound of chicken than a quarter of a pound of beef. In acute Bright's disease or in the complications due to uremic poisoning, there is nothing comparable to a milk diet. In typhoid fever I am in the habit of saying that a suitable diet is one of liquid of which milk is the principal portion. Farinaceous and soft foods are suitable for these cases. I do not permit eggs to be given until the patient is convalescing. Ice-cream is an admirable food in typhoid fever. Individual peculiarities demand changes in diet.

DR. M. B. HARTZELL: We know too little about the chemistry of digestion and the metabolism of food to formulate any definite rules as to the treatment of our patients by diet. We can advise our patients intelligently only by having them under observation over a considerable period of time. Generally speaking, I should favor a fairly liberal diet, with fruit included.

DR. H. B. ALLYN: What might be called the time habit is important in diet. For example, fruit in the morning is much less apt to disagree with digestion than when taken at night. Eating late at night is apt to cause difficulty because the whole digestive apparatus is less energetic than at an earlier hour. If we could manage to control constipation by dieting measures, it would be much better for the patient than the use of pills.

DR. RICHARD C. NORRIS: From the obstetric standpoint, I can say nothing that is not already known. I know of no one single factor that adds so much to the danger of the pregnant woman as the fault of over-eating. I think it a good practical working rule to suggest to such women the omission of the mid-day meal and the substitution of milk and crackers. Of primary importance from the standpoint of diet is the toxemia of pregnancy. I have been much impressed with the importance of a milk diet in these cases. By some it is regarded as the mainstay in the prophylactic treatment of eclampsia.

DR. KATE W. BALDWIN: I recall the case of a pregnant woman who passed the full term of her pregnancy on rectal feeding and was delivered of a well-developed 8-pound child.

CITY OF WASHINGTON BRANCH OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

Regular Meeting, held Nov. 11, 1910

The members of the Association of Official Agricultural Chemists were guests at this meeting and the subject under discussion was:

The Pharmacopeial Convention of 1910 and the Prospective Pharmacopeia of the United States

DR. H. W. WILEY, president of the United States Pharmacopeial Convention, presented a communication in the course of which he outlined his opinions regarding the Pharmacopeia and the methods to be followed in revising it. Among other things Dr. Wiley said:

"One of the most important points, it appears to me, is to see to it that the two great interests represented in the revision of the Pharmacopeia work is complete harmony in the revision which is now taking place. I refer on the one hand to the profession of pharmacy and on the other to the profession of medicine. Practically all of the members of the committee represented one or the other of these great professions. I may say further that the two great professions are equally interested in the matter, but from different points of view. Complete harmony will be secured if the members of the two professions on the committee seek to restrict themselves as nearly as possible to their own peculiar fields of investigation. * * * The pharmacist and the physician, therefore, must join hands and work side by side to secure what is best in this new revision. I may say broadly that the line of cleavage is distinct in respect of the attitude of these two professions. The physician is the one undoubtedly who should study the therapeutic effects of drugs. His training has fitted him for this function and he has been taught, usually by large experience, to note with scientific accuracy the effects which different drugs produce on the human organism, especially in a state of disease. While the physician is not a pharmacologist necessarily in that he is not called on to determine the effects of drugs on perfectly healthy animals, he must be a pharmacologist in that other sense of studying the effects of drugs on the diseased organism. In other words, he is more of a practical than a theoretical pharmacologist. The pharmacist, too, is interested in pharmacology and it is perfectly proper that he should also study, for his own benefit and for the benefit of his profession, the action of drugs, but not with a view of administering them to a patient.

ADMISSION OF USELESS DRUGS

"It may be said that the Pharmacopeia is no place to speak of the therapeutic effects of drugs, and this may be true. Let us grant that this is the case; nevertheless a drug only finds a place in the Pharmacopeia because of its therapeutic effects, which must be well understood, although they may not be set forth in the Pharmacopeia. In other words, it seems to me that the medical members of the Committee on Revision would have a right to object to the introduction into the Pharmacopeia of drugs the therapeutic effect of which is unknown or *nil*, and to require that the Pharmacopeia should include only those drugs which really have a therapeutic value. I know it is difficult to properly discuss so delicate a question when the interests of two professions are at stake, but I will ask if there could be any just reason for including in the Pharmacopeia a remedy the therapeutic value of which is zero, or at least of an uncertain quantity? I can see no just ground for admitting such a drug to standardization in the Pharmacopeia.

"It may be that the pharmacist would have a greater business if he sold large quantities of drugs which produce no therapeutic effect, and it may also be true that physicians would have better success at times if they gave more placebos, producing no effect, but it seems to me that is not the question here. Drugs are supposed to be useful even if their abuse may be dangerous, and unless they have some recognized utility they can not with any justice find a place in the Pharmacopeia. That it was the purpose of the Convention to exercise a wise discrimination in respect of the new matter which should go into the Pharmacopeia and the old matter that should go out is evident. In fact it will be remembered that the Convention took at first a somewhat radical stand in regard to this matter, which was afterwards modified on the distinct understanding that the Executive Committee on Revision should act as a strict censor in regard to these matters.

"The subject was also taken in consideration in the section on pharmacology of the American Medical Association, which reached very positive conclusions that the Pharmacopeia should be freed from all useless preparations, and even from those of doubtful efficacy. Equally severe scrutiny of new matter is also to be recommended. New remedies which have not been established by long experimental use are to be looked on with suspicion, such as buttermilk as a prophylactic against premature death, and many other substances which are fads and fashions rather than remedies founded on facts. At the same time it must be remembered that while one physician might deem a drug of no therapeutic effect, there might be a thousand who would think it valuable, and in such case the wish of the majority should be followed.

THERAPEUTIC NIHILISM

"There is a growing disposition, and I may say perhaps happily so, to discredit the therapeutic value of drugs. Advancing knowledge has convinced thinking people that drugs as a rule do not cure; in fact, under the Food and Drugs Act prosecutions have been instituted for false claims respecting the virtues of drugs because they are held up as a cure for certain diseases. It seems to me that there is a just prejudice forming, not only among the laity, but also in professional circles, against elaborately compounded articles consisting of a great many different substances. These articles seem to be prepared with an idea that there may be something in the compound which will hit the mark. It might be very properly called 'shot-gun' pharmacy and 'shot-gun' therapeutics. It is perhaps very natural for a physician who is uncertain about a case to fire such broadsides in the hope that some of the preparations may become effective. The pharmacist, of course, has nothing to do but to fill the prescription which is sent to him. This prejudice against drugs has doubtless been greatly augmented by the cure-all nostrums which have been so widely advertised, and I may say that in spite of all the work that has been done the cure-all fakir still has a firm hold on the American public. I have often been surprised, and even very recently, by the unqualified confidence reposed in a patent nostrum by intelligent people.

"There is a constant question of the efficacy of drugs and certain schools of therapy have sprung up offering to cure diseases by diet, by exercises, by contortions, by electricity or by all combined, preaching the dangers of the drug habit and its lack of efficiency. All of these things only accentuate what every physician knows, namely, that drugs are no certain cures, and even frequently no certain aids. This condition of disbelief and unrest should not be allowed to go too far because we know that drugs are efficient and useful. It is important, therefore, that in the Pharmacopeia such safeguards should be thrown around the remedies therein described and such conservatism practiced in speaking of their therapeutic effects as to inspire a greater degree of confidence in the minds of the public at large in the utility and efficiency of these remedies.

"This condition of scepticism in the public has been described by one author as 'therapeutic nihilism' and the growth of this distrust in connection with medicinal reagents is clearly pointed out. Much will be done to stem the tide of this destructive tendency by the wisdom and care with which the next United States Pharmacopeia is compiled. There is resting on the Pharmacopeial Convention and its general and executive committees of revision a task of great magnitude attended with obligations of the most serious character."

PROF. JOSEPH P. REMINGTON, chairman of the Committee of Revision, outlined the nature and amount of work that had been accomplished during the summer months. He expressed the belief that the real sentiment of both physicians and pharmacists was neither in favor of a skeleton pharmacopeia nor of a padded pharmacopeia, but of what he was pleased to designate as a sane pharmacopeia.

Prof. Remington also pointed out that for many years the Pharmacopeia was a closed book to the medical profession because its members had been led away from it by the detail man of the manufacturer and proprietary medicine maker. The resulting decay of therapeutics has brought about a state of confusion and a tendency to therapeutic nihilism that he considers to be most unfortunate. He holds that physicians do not know a sufficient number of U. S. P. preparations and do not appreciate the fact that their fellow practitioners in different parts of the country, and in different cities, use totally different medicines, for which the Pharmacopeia of the United States should furnish standards.

DISCUSSION

PROF. I. V. S. STANISLAUS, Philadelphia, asserted that the paper by Dr. Wiley had been to him a revelation. He had been particularly impressed by the reference to needless duplication of drugs having similar properties, and willingly endorsed the proposition to delete useless duplications from the Pharmacopeia. He pointed out that the content of previous pharmacopeias represented the selection and dictates of the few and not of the many and hoped that greater care would be exercised regarding admissions and deletions.

DR. MURRAY GALT MOTTER, secretary of the Pharmacopeial Convention, pointed out more particularly that the work and the function of the executive committee, as outlined by Dr. Wiley, was in accordance with the intent and purpose of the board of trustees of the former convention. He also pointed out that the professional representation on the General Committee of Revision was not alone interesting, but rather significant. Of the total number thirty-four (indeed thirty-five when a vacancy was filled) were nominees of the pharmaceutical caucus and but sixteen were nominees of the medical caucus. Of the latter it is also interesting to note that only two reached the executive committee.

In connection with the scope of the Pharmacopeia he pointed out that the Pharmacopeial Convention by a vote of ninety-five to forty-seven emphatically recorded its conviction that substances "whose value and use have not been established" should not be included. And then, on the plea that it was unnecessary to hamper the committee elected for the purpose of carefully selecting the list of substances, the convention was induced to strike out, by a vote of one hundred and twenty-three to forty, this "ambiguous and dangerous provision," thus leaving the final decision regarding scope with the members of the General Committee of Revision.

With reference to the business of the Pharmacopeial Convention he asserted that it had been pointed out by several observers that "the financial statement made to the Convention was in no wise satisfactory, explicit, or in justice to the intelligence of the body to which it was delivered." In commenting on "the enormous sales of the book amounting to nearly 40,000 copies the first year," he pointed out that as a matter of fact the sales of the Pharmacopeia did not reach 40,000 until the middle of 1908.

In concluding he expressed the belief that if those who are to effect the work of revision do not clearly realize their responsibility to the convention and to the several professions represented, and produce a book of standards, indeed, but of standards for substances of established value and use, the next Pharmacopeia, instead of being a force, will be a farce.

DR. REID HUNT, chairman of the American Medical Association Committee on the Pharmacopeia, pointed out that regarding the scope of the book there were two diametrically opposed views, both of which deserve consideration. The manufacturer and the pharmacist desire to have a book of standards that will include all of the substances that are, have been or may be used as medicine, while the medical practitioner desires to have a book of standards for the approved therapeutic agents only so that the book may be used as a basis for instruction in medical schools and as a guide to the physician who is willing to adopt and use recognized standard remedies. It must be evident that these two objects are so totally different that it would be practically impossible to agree on a compromise, and any attempt to do so would be considered a straddle that could be acceptable to but few.

He heartily endorsed the stand taken by Dr. Wiley regarding the scope of the book and expressed the belief that physicians and pharmacists should not be expected to furnish standards for Custom House officials and "patent-medicine" manufacturers. As chairman of the Committee on the Pharmacopeia of the American Medical Association he had been able to get into communication with thousands of medical practitioners in various parts of the United States, all of whom were willing to use the best medicines that were available and desirous of obtaining authentic information regarding the probable efficiency of drugs.

Dr. Hunt outlined the methods that had been employed by his committee to secure the cooperation of the several sections of the American Medical Association and, referred more especially to the correspondence that had been had with medical men in active practice who were also teachers of materia medica and therapeutics in medical schools and colleges, and asserted that despite the fact that the evidence thus secured had been submitted through the Pharmacopeial Convention to the Committee on Revision, many of the members appeared to be willing to ignore the wishes of physicians and that the indications were that the scope of the forthcoming Pharmacopeia would again represent the views of but a limited number of individuals.

As an indication of the opinions held by the better informed medical men he quoted Dr. Abraham Jacobi, the Nestor of American physicians, who in discussing the content of the present Pharmacopeia deplored the fact that the makers of the Pharmacopeia were not willing to restrict the book to the best remedies only.

DR. W. M. BARTON seconded the remarks made by Dr. Hunt and asserted that he had also come to the conclusion that there are two diametrically opposed opinions regarding the scope of the Pharmacopeia and was satisfied that the book cannot, as it now stands, be accepted by medical men as a guide. He suggested the possibility of limiting the medical recognition of drugs by introducing a fair statement of the physiologic action of the substance with each description.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

November 19

1 Nervous Affections and Adjustments of the Eyes. G. T. Stevens, New York.
2 Pathogenesis of the Toe Phenomenon. A. Gordon, Philadelphia.
3 *Extramedullary Spinal Cord Glioma. D. Inglis, Detroit; T. Klingman, Ann Arbor, and M. Ballin, Detroit.
4 Proper Method of Administering Ether. A. D. Young, Oklahoma City.
5 Anesthesia Dangers. I. D. Frescoln, Philadelphia.
6 Local Anesthesia in General Surgery. L. F. Watson, Oklahoma City.
7 Determination of the Dose of Stovain in Spinal Anesthesia by Blood-Pressure Observations. M. Sallom, Philadelphia.
8 Tonsil-Grasping Forceps. A. M. MacWhinnie, Seattle, Wash.
9 *What Is the Direct Cause of the Seizures of Epilepsy? N. P. Levin, Edgewater, Colo.
10 Reveries of a Young Practitioner. F. McK. Bell, Ottawa, Ont., Canada.

3. **Extramedullary Glioma.**—The course of the disease in this case was that of a slowly progressive segmental lesion, in the earlier stage of development unilateral, giving the clinical aspect of the Brown-Séquard symptom-complex. The characteristic pain, distinctly localized, due to nerve root irritation, was prominent from the beginning and at no time did the diagnosis of spinal tumor seem doubtful. The patient was seen very early by Dr. George Dock. At that time the only symptom was a pain sharply circumscribed in the one area supplied by the seventh thoracic nerve. There were no other symptoms, and Dr. Dock concluded that the cause was not due to any disturbance of the internal organs, and that it was a distinctly localized condition limited to the seventh thoracic nerve. It was clearly shown by the attachment of the tumor that there could not have been at the beginning of the neuroglia proliferation any involvement of the corresponding segment. Although originating very close to the spinal cord itself, the pain was referred from the nerve root. The tumor was removed and the patient made a complete recovery.

9. **Epilepsy.**—Levin holds that vascular phenomena precisely similar to those occurring in asthma, or angioneurotic edema, occur in the brain with each epileptic seizure. The violent symptoms occurring during an epileptic fit are explained by the sudden increase in the intracranial pressure entailed by this exudation within the rigid, unyielding walls

of the skull. As soon as the pressure within the cranium has readjusted itself the symptoms will pass off. To support his contention for the inclusion of epilepsy within the class of angioneurotic affections various facts are brought forth. In common with the other manifestations of the exudative diathesis, it has a constitutional irritability of the nervous system as its principal etiologic factor. Just as attacks of bronchial asthma have been sometimes associated with urticaria, or angioneurotic edema of the hands or feet; or have been known to alternate with attacks of hay-fever; so attacks of epilepsy have been known to alternate with attacks of bronchial asthma—as stated by Salter. Furthermore, the premonitory symptoms which usher in some attacks of asthma are essentially the same as the auræ of epilepsy. Since, according to this theory, each epileptic seizure is associated with an increase of intracranial tension it has occurred to Levin that possibly a decompression operation would be of service in this disease. By removing a portion of the unyielding skull and substituting instead an expansile diaphragm in the shape of the scalp it will allow of quicker adjustment of intracranial tension, and thus, perhaps, diminish the frequency or severity of epileptic seizures.

Medical Record, New York

November 19

11 Chemical Problems in Diabetes Mellitus. A. Magnus-Levy, Berlin.
12 Causes of Death from Shock by Commercial Electric Currents, and the Treatment. E. MacD. Stanton, Schenectady, N. Y., and A. Krida, Albany, N. Y.
13 Use of Thiosinamin in Treatment of Cicatrices Following Burns. J. E. Mears Philadelphia.
14 Restoration of Inhibitory Qualities in Liver Extracts. D. M. Kaplan, New York.
15 A New Theory of Eclampsia. J. R. Mitchell, Fort Worth, Texas.

Boston Medical and Surgical Journal

November 17

16 Operative Treatment of Atresia of the Vagina. W. P. Graves, Boston.
17 Cancer of the Scrotum. R. M. Green, Boston.
18 Clinical and Bacteriologic Researches on Mikulicz's Method of Rendering the Peritoneum Resistant to Surgical Infections. E. De Paoli, Perugia, Italy.
19 *Technic of Arthrotomy. C. F. Painter and A. P. Cornwall, Boston.

19. Technic of **Arthrotomy.**—The authors made several attempts to preserve motion after arthrotomies by the injection of sterile oil, but were unable to satisfy themselves that the oil exerted any strikingly helpful influence on the preservation of motion.

Lancet-Clinic, Cincinnati

November 12

20 Functional Psychoses. C. F. Read, Hospital, Ill.
21 *Etiology of the Functional Neuroses. E. S. Everhard and G. Felker, Dayton, Ohio.
22 Conclusive Researches in Metabolism. H. R. Harrower, Chicago.
23 More About Ehrlich's "606" from Foreign Letters. A. O. Zwick, Cincinnati.

21. Abstracted in THE JOURNAL, Oct. 1, 1910, p. 1221.

Kentucky State Medical Journal, Bowling Green

October 15

24 *Preventive Medicine. J. E. Wells, Cynthiana.
25 Responsibility of the State in the Care of Its Dependents. F. Billings, Chicago.
26 Abdominal Crises, Due to Pathologic Changes in Meckel's Diverticulum Other Than by Obstruction by Band. G. A. Hendon, Louisville.
27 Something Old and Something New in Medicine. D. O. Hancock, Louisville.
28 Pellagra. J. A. Van Arsdall, Nicholasville.

24. Abstracted in THE JOURNAL, Oct. 15, 1910, p. 1400.

Archives of Internal Medicine, Chicago

November

29 *Use of Pure Lipoids and Alcoholic Extracts With Active and Inactive Serum in the Serodiagnosis of Syphilis. T. MacRae, A. B. Eisenbrey and H. F. Swift, New York.
30 Wassermann Reaction in the Pathology, Diagnosis and Treatment of Syphilis. R. M. Pearce, New York.
31 *Peculiar Elongated and Sickle-Shaped Red-Blood Corpuscles in a Case of Severe Anemia. J. B. Herrick, Chicago.
32 *Elimination of Bacteria from the Blood Through the Wall of the Intestine. A. F. Hess, New York.
33 *Experimental Lung Anthracosis. L. S. Mace, San Francisco.
34 *Induction of Pancreatic Activity by Removal of the Adrenals. J. E. Sweet and R. Pemberton, Philadelphia.
35 Fatal Sodium Chlorid Poisoning. H. Brooks, New York.
36 *Experimental Study of the Resistance to Compression of the Arterial Wall. T. C. Janeway and E. A. Park, New York.
37 *Cutaneous Tests with Corn Extracts in Pellagrins. A. D. Hirschfelder, Baltimore.

29. **Complement-Fixation Tests for Syphilis.**—The authors have found that the "pure lipoid" antigen (ether extract) has proved the more satisfactory. It has given, with syphilis, the largest percentage of strongly positive reactions by all three methods. The alcoholic extract antigen, when used with active serum, has given the largest percentage of non-specific reactions. Inactivation apparently destroys the power of a non-specific serum to cause a positive reaction. The Noguchi method, using active serum, gives the most sensitive reaction in syphilis; the Wassermann and the Noguchi "inactive" methods stand in the order named. One of the most important factors in securing reliable results, when active serum is employed, is the performance of the reaction within twenty-four hours after the serum is obtained.

31. **Peculiar Red Corpuscles in Anemia.**—In the case cited by Herrick, the condition was evidently chronic as revealed by the history of the past three years, with yaws and suppurating otitis as predecessors, yet with acute exacerbations. The condition was not clearly explained on the basis of an organic lesion in any one organ. There was cardiac enlargement, albuminuria and cylindruria, general adenopathy, icterus, with a secondary anemia not remarkable for the great reduction in red corpuscles or hemoglobin, but strikingly atypical in the large number of nucleated red corpuscles of the normoblastic type and in the tendency of the erythrocytes to assume a slender sickle-like shape. The leukocytosis with a rather high eosinophil count was also to be noted. Syphilis was suggested by many of the facts, such as adenopathy and the conditions of the heart and kidneys; it might explain the anemia, the arthritis and perhaps also the temperature, cough and attacks of pain resembling hepatic or gall-bladder disease for, as is well known, visceral syphilis may furnish a most bizarre group of symptoms. The Wassermann test was not in use at this time. The scars said to have been due to yaws were like those left by syphilis. The patient coming from the tropics, one thought of intestinal parasites such as uncinaria as a possible explanation of the anemia and the eosinophilia. What were thought to be eggs were found on one occasion only, and after thymol there was temporary improvement. The odd blood-picture made one examine for possible toxic effects of the coal-tar preparations, but neither from the history nor from the examination of the urine was there any evidence that such drugs were habitually taken. The question of diagnosis, therefore, remains an open one unless reports of other similar cases with the same peculiar blood-picture shall clear up this feature.

32. **Elimination of Bacteria.**—As a result of his experiments, Hess states that bacteria, using the *Bacillus prodigiosus* for the test, are excreted from the blood, not only by way of the liver through the bile, and the kidneys through the urine, but also, to a less extent, directly through the intestinal wall. This was found to take place in one hour when one platinum loop of culture medium was inoculated. In these experiments all other paths of access from the blood to the lumen of the intestines were absolutely closed off, including the path from above by way of the pylorus, and the entry by way of the pancreatic and the bile-ducts. It may be argued, says Hess, that the severity of the operative procedure contributed to the result by rendering the intestinal wall less resistant, and by increasing its permeability. It may be answered that this argument may be brought forward in the case of all experimental data. In the experiments performed, the operations were carried out quickly, and with as little handling of the intestines as possible. Moreover, the question of complicating peritonitis or inflammatory reaction did not enter, as, apart from the careful asepsis observed, in almost all cases the animal was killed shortly after. Although it is a well-recognized fact that bacteria can pass with the lymph-stream through the intact intestinal mucosa, and then migrate from the lumen of the intestine to the blood, the reverse phenome-

non, namely that they pass from the blood through the mucosa into the intestine, has, as far as Hess is aware, not previously been demonstrated.

33. **Experimental Lung Anthracosis.**—Purified talc was injected by Mace into the peritoneal cavity and after a certain time the animal was killed and the organ under observation completely burned in a platinum crucible. The residue was treated on the water-bath with hydrochloric acid. In control experiments in which only a few milligrams of talc were added to the viscera, this substance was easily recovered and recognized. Experiments made show that talc is not carried from the peritoneal cavity and mesenteric lymph-nodes to the lungs during the maximum period of observation of these animals. They do not prove that charcoal is not thus carried, but they add largely to the probability that it is not. While it may be asserted, says Mace, that results obtained with talc cannot be applied to charcoal, on account of the great difference in density, size of particles, etc., it should be remembered that the silicates, under certain circumstances, form the basis of lung deposits, a natural lung silicosis being sometimes observed in potters and quarry workers. Although the analogy between lung silicosis and lung anthracosis is certainly as great as the analogy between lung anthracosis and lung tuberculosis, it cannot be held that these results apply conclusively to ingested tubercle bacilli. They do, however, add important evidence against the theory that the origin of lung deposits is by way of the mesenteric lymph channels.

34. **Adrenals and Pancreatic Activity.**—The authors found that the removal of the suprarenal glands induces in dogs a flow of pancreatic juice. This has been equaled in duration and activity only by the processes, natural or experimental, which depend on activation by duodenal secretin. Taken in connection with the inhibitory action of suprarenal and pituitary extracts on the pancreatic flow, this suggests a control over the pancreas, by the adrenals at least, in the absence of which the gland secretes more actively. This activation of the pancreas may occur with a high systemic blood-pressure, though it generally occurs when the systemic blood-pressure is relatively low. Hemorrhage may modify or prevent it. There is some evidence to indicate that on the death of a dog from removal of the adrenals, there is present in the duodenum more prosecretin than exists in dogs otherwise operated on which have their adrenals intact, and which die after a comparable long period of etherization. This preponderance may be a contributory factor in the production of a flow. One of the factors which seems to make detection of prosecretin in human beings difficult is probably the lingering death of most of those from whom the intestinal extracts are made. In clinical investigations of secretin comparisons should not be made between such preparations and those from freshly killed animals, unless this fact be borne in mind.

36. **Resistance to Compression of Arterial Wall.**—The object of this study was to determine whether the resistance to compression of the arterial wall introduces an error of any importance in the clinical measurement of systolic blood-pressure by methods employing circular compression of the arm. The material examined was as follows: 1. Twelve common carotids from infants removed post-mortem, of which ten gave results free from obvious error. 2. Twenty-three common carotids and four iliacs taken from adults, removed post-mortem, of which twenty gave results free from obvious error. 3. Six arteries taken from amputated limbs, of which four gave results free from obvious error. 4. Thirty-eight common carotids and four mesenterics from the ox, of which eleven gave results free from obvious experimental error. 5. Six samples of rubber tubing of different caliber and lumen; one boiled artery; one esophagus; one segment of a small intestine. Two other structures were examined. An infant's esophagus was tested and found to compress absolutely at an increment of external pressure of only 1 mm. Hg. The intestine was also tested, but fruitlessly, since its lax wall at once collapsed over the end of the outflow cannula. The authors conclude that the arterial wall offers definite resistance to compression. Other things being equal, small arteries with thin walls are more readily compressed than large arteries with thick walls. In infancy and childhood the resistance of the arterial wall is a negligible factor in clinical blood-pressure measurements. Arteries as large as the brachial may require only the pressure of a few millimeters of mercury for the obliteration of their lumen. In adults with normal arteries and a normal range of blood-pressure, the arterial wall is a practically negligible factor. It probably never introduces an error greater than 10 mm. Hg in clinical blood-pressure measurements, a figure less than the spontaneous variations in pressure from minute to minute. Atheroma, even of considerable degree, is without appreciable effect on the compressibility. Calcification of the arterial wall, when segments longer than 6 cm. are examined, increases only moderately its resistance to compression. The overpressure dependent on this factor in their experiments did not exceed 17 mm. Hg. In clinical blood-pressure determinations, if a wide arm-piece be used, and the return of the first fully developed pulse-wave be taken as the index, as recommended by von Recklinghausen, even advanced arterial thickening and calcification probably do not introduce an error of any importance. The only factor determining the compressibility of an artery which seems capable of introducing an error of real importance in the clinical measurement of systolic blood-pressure, is the state of contraction of its walls. It is impossible from their experiments on surviving ox arteries to set definite numerical limits for this in man. From these experiments, however, combined with the study of human arteries, after amputation and post mortem, the authors feel that a degree of hypertonic contraction of the brachial artery sufficient to cause an error of more than 30 mm. Hg seems improbable, and of more than 60 mm. incredible, during life. The point of return of the pulse after obliteration, not of its disappearance during compression, should always be the criterion of systolic blood-pressure.

37. **Skin Tests with Corn Extracts in Pellagra.**—In these observations, cutaneous tests were made with substantially the same technic as that employed by v. Pirquet in tuberculosis except that corn extracts were substituted for tuberculin in making the test. The procedure was as follows: 20 gm. of corn was extracted with 50 c.c. of ether, alcohol, 10 per cent. sodium chlorid, or 0.2 per cent. sodium hydroxid. The extract was filtered and 1/10 vol. 5 per cent. phenol added to the clear filtrate so as to give it a content of 0.5 per cent. phenol. The ethereal extracts were allowed to evaporate at 46 degrees, until the odor of ether had disappeared. The site chosen for the test was on the patient's wrist in an area which was subject to pellagrous pigmentation, thickening or desquamation, and, in most cases, was bare so as to be exposed to the action of light. A drop of the extract to be tested was placed on the skin and a pin-head area of epidermis beneath the drop was excoriated by the torsion of a v. Pirquet stylet. Into this excoriated area the extract was rubbed with a glass rod. A series of epidermal punctures were made in this way in a line across the wrist, with another line of duplicate punctures above them. In each series there was a pair of controls in which only the pure sodium chlorid or sodium hydroxid solution or alcohol was placed on the skin. Within half an hour after the puncture a small red or sometimes blanched areola and occasionally a small papule formed about the site of inoculation, but in only one case did this exceed 5 mm. in size, and no differences could be noted between the areas about the punctures with corn extracts and the controls. The reactions in sites which were nearest the midline of the forearm were often slightly more marked (areolæ about 1 mm. larger than the rest), but these reactions were always quite as marked with the control fluids as with the extracts and hence were of little significance. The reactions, which were regarded as negative in all cases, consisted of simple traumatic reactions, were watched for about half an hour and the sites of inoculation were again inspected three hours, twenty-four hours, and forty-eight hours later, as well as at frequent intervals between and after the expiration of these periods. Extracts were made from samples of good corn, spoiled corn taken from the Arkansas Insane Asylum at the time of a pellagra outbreak, and a sample of spoiled corn containing *Aspergillus fumigatus*. These reactions were all negative. The results of

these tests, therefore, render it improbable that pellagra is due to or accompanied by a condition of hypersensitiveness of the individual to products derived from good or from spoiled corn.

New York State Journal of Medicine

November

38 Post-Operative Care of the Wound. R. S. Fowler, Brooklyn.
39 Public Health Education and Progress of Medicine. D. L. Kathan, Schenectady.
40 Mineral Waters of Saratoga Springs in the Rôle of Therapeutic Agents. G. H. Fish, Saratoga Springs.
41 A Case of Duodenal Perforation. J. J. Kane, Binghamton.
42 Laboratory Tests as an Aid in Diagnosis of Disturbed Liver Functions. L. Colegrove, Elmira.
43 Glaucoma. R. L. Crockett, Oneida.
44 The Outlook—An Appreciation. A. S. Chittenden, Binghamton.
45 The Physician's Place in Society. W. W. Skinner, Geneva.
46 Animal Experimentation. A. W. Armstrong, Canandaigua.
47 Pathologic Findings in the Right Iliac Fossa. J. P. Creveling, Auburn.
48 Blood Pressure—Its Significance and Treatment. J. K. King, Watkins.
49 Experiences with Eclampsia. M. P. Messinger, Oakfield.
50 Diagnosis and Treatment of Anterior Poliomyelitis. C. F. Clowe, Schenectady.
51 Tuberculosis in Children. H. S. Goodall, Lake Kushaqua.
52 Blood Pressure in Advanced Arteriosclerosis. H. Schoonmaker, Clifton Springs.
53 Toxic Amblyopia and the Optician. D. G. Yates, New York.

Journal of Biologic Chemistry, Baltimore

November

54 *Improvement of the Folin Method for the Determination of Urinary Ammonia Nitrogen. M. Steel, New York.
55 Presence of Arginin and Histidin in Soils. O. Schreiner and E. C. Shorey, Washington, D. C.
56 Pyrimidin Derivatives and Purin Bases in Soils. O. Schreiner and E. C. Shorey, Washington, D. C.
57 Preparation of Creatinin from Urine. O. Folin and F. C. Blanck, Boston.
58 Preparation of Creatinin from Creatin. O. Folin and W. Denis, Boston.
59 *Determination of Total Sulphur in Urine. W. Denis, Boston.
60 *Estimation of Urea. S. R. Benedict, Syracuse, N. Y.
61 Benedict's Method for Determining Total Sulphur in Urine. C. L. A. Schmidt.
62 Determination of the Amid Nitrogen in Proteins. W. Denis, Boston.

54. **Determination of Urinary Ammonia.**—That sodium hydroxid may be advantageously substituted for sodium carbonate in determining the urinary ammonia-nitrogen in normal urines is shown by Steel. In order to ascertain whether sodium hydroxid, in the proportions employed in previous experiments and in the presence of a relatively large amount of sodium chlorid, would produce ammonia from amino radicals, weighed amounts (0.1 gram) of urea, uric acid, glycocoll, taurin, leucin, tyrosin, hippuric acid, guanin, allantoin, and mixed creatin and creatinin were added separately and collectively to 25 c.c. fractions of normal urines and, after aeration in the usual manner, the amounts of liberated ammonia nitrogen were compared with those from the original urines. In no case was any increase observed. These same substances were also added to 20 c.c. fractions of a standard solution of ammonium chlorid instead of urine and the ammonia content determined. Here again no increase was obtained. In Steel's opinion these results show conclusively that the ordinary organic constituents of urine are not decomposed by the stated proportions of sodium hydroxid, in the presence of a physical excess of sodium chlorid and under conditions favorable for the liberation of all the inorganic ammonia in normal urine. As a final test of the efficiency of the modified method, the ammonia in fractions of a given sample of normal urine was separated by the Folin method and also by the modified method. The results completely confirmed the conclusion already drawn, to the effect that, in the case of urines containing crystals of triple phosphate the Folin method fails to give perfectly accurate results for ammonia content. These results also still further emphasize the statement that sodium hydroxid in amounts varying from 0.5 to 1 gram plus about 15 grams of sodium chlorid may be substituted for the sodium carbonate as prescribed in the Folin method. The modified method has, therefore, a number of points in its favor, since many samples of pathologic urine contain crystalline triple phosphate.

59. **Determination of Sulphur in Urine.**—A modification of Benedict's method has been devised by Denis, so as to prevent the too rapid evolution of the oxids of nitrogen. The method is as follows: To 25 c.c. urine contained in a porcelain evaporating dish of approximately 4½ inches in diameter, add by means of a pipette or burette 5 c.c. of a solution containing 25 grams of copper nitrate (crystals), 25 grams of sodium chlorid and 10 grams of ammonium nitrate. Evaporate to dryness on the steam bath or with a very small flame, then heat gently with a small flame, gradually increasing the flow of gas until the dish is heated to redness, and continue to heat at the latter temperature for from ten to fifteen minutes. Allow to cool and add from 10 to 20 c.c. of 10 per cent. hydrochloric acid. On gently warming for a few moments a clear solution is obtained. Transfer to a 200 c.c. Erlenmeyer flask, make up to 100 or 150 c.c. with water, heat to boiling and add drop by drop 25 c.c. of a 10 per cent. solution of barium chlorid. Let stand one hour or more and filter on a Gooch crucible. A blank must be run on 10 c.c. of the oxidizing solution as copper nitrate generally contains traces of sulphate, and the amount of sulphate thus found deducted in the final calculations. By the use of the above described oxidizing mixture the spattering which is so prominent a feature in the Benedict method is entirely eliminated, the only precaution necessary being the avoidance of too rapid heating at the beginning of the fusions. If at this time the burner be turned up so rapidly that clouds of nitrous oxid gas are evolved the result will be low.

60. **Estimation of Urea.**—In the use of Benedict's method a sulphuric acid bath is required which must be kept at a temperature of from 162 to 165 F. The technic recommended for the estimation of urea in urine is as follows: 5 c.c. of urine are introduced into a rather wide test-tube, and about 3 grams of potassium bisulphate, and from 1 to 2 grams of zinc sulphate are added. (The quantities of these salts may be measured roughly. An excess of the zinc salt is to be avoided, as too large a quantity tends to cause slight frothing during the final distillation.) A bit of paraffin, and a little powdered pumice are then introduced into the tube (to prevent frothing and spattering) and the mixture boiled practically to dryness, either over a free flame, or more conveniently, by floating the tube in a bath of sulphuric acid kept at about 130 F. The tube is then placed in a sulphuric acid bath which is maintained at from 162 to 165 F. (not lower), and left there for one hour. During this heating the tube must be weighted (a large-sized screw-clamp is convenient), so that it will be immersed in the acid for at least three-fourths of its length. At the end of the hour the tube is removed from the bath, the acid washed off under the tap, a little distilled water poured into the tube, and the contents washed (with the aid of heat) quantitatively into an 800 c.c. distillation flask. (A small amount of black pigment finally adhering to the sides of the tube may be disregarded, as the ammonium compounds are readily soluble.) The fluid in the distillation flask is diluted to about 400 c.c., rendered alkaline through the addition of 15 or 20 c.c. of 10 per cent. sodium hydroxid (or 25 c.c. of 15 per cent. sodium carbonate), and distilled for forty minutes into an excess of standard acid. The residual acid is then titrated, and the urea nitrogen calculated (after subtraction of the previously determined ammonia nitrogen). In dextrose-containing urines this method may be employed in combination with the Mörner-Sjöqvist method.

Medical Fortnightly, St. Louis

November 10

63 Pleural Effusions: Diagnosis and Treatment. E. B. Montgomery, Quincy, Ill.
64 Recurrent Insanity and the Stigmata of Degeneracy. M. R. Hughes, St. Louis.
65 Individual Treatment of Morphin Habitués. W. F. Waugh, Chicago.

American Journal of Physiology, Boston

November

66 *Influence of Alcohol on Nitrogenous Metabolism in Men and Animals. L. B. Mendel and W. W. Hilditch, New Haven, Conn.
67 *The Isolated Kidney—Influence of Pulse Pressure on Renal Function. D. R. Hooker, Baltimore.
68 Sensory Changes in the Skin Following Application of Local Anesthetics and Other Agents. S. I. Franz and W. C. Ruediger, Washington, D. C.
69 *Secretion of the Infundibular Lobe of the Pituitary Body and Its Presence in the Cerebrospinal Fluid. H. Cushing and E. Goetsch, Baltimore.

70 Auricular Strips of the Cat's Heart. J. Erlanger, Madison, Wis.
71 *Comparison of the Total Nitrogen Excretion of Either Kidney in Normal Individuals During Varying Periods of Time. T. B. Barringer and B. S. Barringer, New York.
72 Production of Light by the Firefly. J. H. Kastle and F. A. McDermott.
73 Acapnia and Shock: Failure of the Circulation. Y. Henderson, New Haven, Conn.
74 *Metabolism of Development. J. R. Murlin, New York.

66. **Influence of Alcohol on Nitrogenous Metabolism.**—A study of protein metabolism and utilization, and especially the partition of nitrogen in the urine, under the influence of alcohol, was carried out on man and dogs under fixed and comparable conditions of diet. In man the doses used were moderate, i. e., 500 calories daily in the form of alcohol distributed in six portions. With the animals a range of dosage leading to distinct intoxication was employed. The findings in general were as follows: There is no pronounced disturbance in the alimentary utilization of the foodstuffs. Moderate doses exert a protein-sparing action, which is succeeded by loss of nitrogen when larger quantities of alcohol are administered. The partition of urinary nitrogen remains remarkably unaltered with the exception of an increased elimination of ammonia nitrogen (accompanying other evidences of perverted metabolism as indicated by the appearance of optically active (levorotatory) compounds in the urine, following "toxic" doses, and a higher output of purins. The theoretical significance of the latter, which affects both the endogenous and exogenous fractions, is discussed at some length; and its bearing on the assumed nutrient properties of alcohol is indicated. The most significant impression, perhaps, which the analytical data afford, is the absence of pronounced alterations indicative of markedly disturbed protein metabolism, even when comparatively large doses are continued for days and weeks. This has been interpreted as another evidence of the "factor of safety" in metabolism.

67. **Isolated Kidney.**—A perfusion apparatus is described by Hooker which yields a pulsatile wave of pressure similar to the normal pulse wave and which allows of alteration in the magnitude of the pulse pressure. The use of the apparatus in the study of isolated (dog's) kidneys yielded the following results: With a constant mean perfusion pressure the amount of urinary filtrate varied directly as the magnitude of the pulse pressure. With a constant mean perfusion pressure the amount of protein in the urinary filtrate varied inversely as the magnitude of the pulse pressure. With a constant mean perfusion pressure, the rate of blood-flow through the organs varied directly as the magnitude of the pulse pressure.

69. **Secretion of the Infundibular Lobe.**—The object of this communication is to call attention to the presence of a substance in the cerebrospinal fluid which gives the same reactions as extracts of the pars nervosa itself, indicating in all probability that the active principle long recognized as being confined to this anatomic subdivision of the gland is actually secreted into the ventricular cavity. This would seem to establish the theory that the hyaline bodies of the pars nervosa, regarded by Herring as products of secretion of the posterior lobe——a view supported on experimental grounds by the authors—actually discharge, as their histologic appearance suggests, into the third ventricle and represent the source of the active substance resembling pituitin in the cerebrospinal fluid.

71. **Total Nitrogen Excretion of Kidney.**—The work done by the Barringers was carried out on eleven young men, all in good health. In collecting the urine the method of Albarran was employed. As regards the total nitrogen: in one case the quantities were equal. In seven cases they varied by less than 1 gm. to the liter. In two cases they varied by between 1 and 2 gm. to the liter. The nitrogen-urea plus ammonia-urea showed in three cases a variation of less than 1 gm. to the liter and in six cases a variation of between 1 and 2 gm.

74. **Metabolism of Development.**—The nitrogen balance was followed by Murlin through two complete periods of gestation beginning with copulation, through parts of two others beginning several weeks previous to menstruation and through one period of menstruation which was not followed by copulation. In the first two experiments the diet contained 70 calories and from 0.65 to 0.75 gm. N. per kilogram daily. From the first pregnancy one puppy was born, and the result was a net gain of 8.69 gm. N. to the mother's body. From the second four puppies were born, and the result was a net loss of 55.6 gm. N. from the mother's body. Up to the fourth week in these two experiments (on different dogs) the amounts of nitrogen lost from the mother's body were proportional to the weights of puppies delivered. The effect of the menstruation was to cause a retention of nitrogen, which may be explained, in part at least, as a compensation for the amount of blood lost. The results of these experiments, Murlin believes, support the idea that nitrogen loss from the mother's body is characteristic of the first half of normal pregnancy in the dog, particularly of the third and fourth weeks. This is probably due to the action of proteolytic enzymes produced by the embryo and not yet limited by the placenta in their action to the maternal blood. Nitrogen retention has been found in these, as in all other experiments, in the last half of the pregnancy. The curve of nitrogen elimination in the urine shows that the retention in the last week of pregnancy is fairly even from hour to hour.

Journal of Nervous and Mental Diseases, Lancaster, Pa.

November

75 *Personal Experience with Freud's Psycho-Analytic Method. J. J. Putnam, Boston.
76 Multiple Sclerosis with Primary Degeneration of the Motor Columns and Hypoplasia. T. H. Weisenburg and S. D. Ingham, Philadelphia.
77 The Case of Robert Bachman—A Study in the Psychology of Religion. W. W. Richardson, Norristown, Pa.

75. Abstracted in THE JOURNAL, July 16, 1910, p. 247.

Chicago Medical Recorder

November

78 Art vs. the Science of Medicine. C. B. Reed, Chicago.
79 Evolution and Hopes of Civil Service in Illinois. J. C. Mason.
80 Reputable Stock Neisser Bacterin in Chronic Gonorrhea. O. F. Scott, Argo, Ill.

Surgery, Gynecology and Obstetrics, Chicago

November

81 *Tuberculosis of the Body of the Uterus, Confined to the Myometrium. R. Alessandri, Rome, Italy.
82 Thrombosis of Pelvic Veins Following Septic Abortion. G. Seeligmann, New York.
83 *Tumors and Retention Cysts of the Appendix. H. Crouse, El Paso, Texas.
84 *Etiology of Cholecystitis. J. E. Else, Pullman, Wash.
85 Abscess of the Liver. A. B. Herrick, Ancon, Canal Zone.
86 End-Results of Operations for Relief of Neurasthenia Associated with Various Visceral Ptoses. W. M. Polk, New York.
87 *The Blood Supply of the Liver. E. Staehlin, Newark, N. J.
88 *Surgery of the Thorax. W. C. Quinby, Boston.
89 *A New Oil in the Treatment of Postoperative Abdominal Adhesions. W. G. Crump, New York.
90 Chronic Intestinal Stasis. W. A. Lane, London.
91 Injuries of the Venous Sinuses of the Brain. E. M. Brown, Chicago.
92 *Bone Transference. J. McKenty, Winnipeg, Canada.
93 Technic of "Pole Ligation" for Hyperthyroidism. J. H. Jacobson, Toledo, Ohio.
94 *A Modified Viscera Forceps. A. J. Schoenberg, Chicago.
95 *Peritoneal Director. W. F. Church, Greeley, Colo.
96 Simultaneous Use of Cotton and Rubber Gloves in Operations. J. J. Buchanan, Pittsburg.
97 Wire-Carrier for Bone Suture. J. J. Buchanan, Pittsburg.

81. **Tuberculosis of the Body of the Uterus.**—The author believes that his case is without any doubt one of tuberculosis of the uterus, originally of the myometrium. That there was no affection of the ovaries, the tubes, the serous membrane, or the endometrium on the surface, excludes the primary localization in them as is the usual case. On the other hand, the extension of tuberculous alteration in the muscle of the anterior wall toward the fundus in the form of a great caseous gumma surrounded on all sides by bands of muscles, and the diffuse caseous necrosis of the focus serve to demonstrate the original seat of the process, while the miliary tubercles scattered in the neighboring muscle and toward the mucous coat evidently indicate a more recent diffusion. The localization in the myometrium, he thinks, must certainly have come by way of the blood-vessels, and probably is secondary to another focus in the organism, of which, however, clinically there was no trace; but it may exist if only in one or a few peribronchial or mesenteric ganglia without any actual symptomatic manifestation.

83. **Tumors of the Appendix.**—A study of the primary malignant growths of the appendix has convinced Crouse that the appendix should always be investigated while doing other intra-abdominal work; that many so-called spheroidal cell primary carcinomas of the appendix may be simply remains of imperfect tissue repair. Why, he asks, should the simple removal of an organ, an integral portion of a continuous structure, seemingly malignantly involved, give nearly an absolutely good prognosis in 57 per cent. of all malignant cases and 100 per cent. of the spheroidal type?

84. **Etiology of Cholecystitis.**—This work was undertaken by Else for the purpose of throwing more light on infection through the blood-stream, and to determine, if possible, which is responsible for the most cases of cholecystitis, the portal system or the general circulation. All work was done on rabbits, with the exception of two experiments quoted from a previous communication, and under strict aseptic and antiseptic precautions. The *Bacillus pyocyaneus* was used, as this organism is not present normally in the gall-bladder of the rabbit, and it is an organism that is easily identified. A ligature was placed about the cystic duct, care being taken not to include the cystic artery. One cubic centimeter of a virulent culture was injected into a superficial vein. Later, a culture was made from the gall-bladder. The ligature prevented the ascension of infection from below so that the bacilli could reach the gall-bladder only through the cystic artery. Hence this series demonstrates that organisms in the general circulation reach the gall-bladder readily through the terminal arteries and capillaries the same as they reach other organs. One cubic centimeter of the culture was next injected into the portal vein. Later, a culture was made from the gall-bladder. This group of experiments showed that when organisms are injected into the portal vein they do not readily reach the gall-bladder, but it does not show that they did not reach the bile, for they may have been carried on down the common duct instead of ascending the cystic duct into the gall-bladder from whence the culture was made. In order to determine whether the organisms did reach the bile, the common duct was ligated and 1 cubic centimeter of the culture was injected into the portal vein. Later, cultures were made from the gall-bladder. This group proves that when infection is injected into the portal vein it will reach the bile. There are two possible routes through which the infection may have gone, first, by passing through the capillaries from the portal vein to the hepatic veins, then through the general circulation to the gall tract, through branches of the hepatic artery; and second by passing from the capillaries through the normal liver cells into the bile radicals. Now if the cystic duct were ligated and infection injected into the portal vein, it would determine the route, for if it were by the general circulation the gall-bladder would become infected, as the organisms would reach it through the cystic artery. On the other hand, if infection of the gall-bladder be through the portal route, the contents of the gall-bladder would be sterile, for with the cystic duct ligated there would be no way for the infection to reach it. Accordingly, the cystic duct was ligated, care being taken not to include the cystic artery. One cubic centimeter of the virulent culture was injected into the portal vein. Later, a culture was made from the gall-bladder. This group proves that infection passes from the portal vein to the hepatic veins through the capillaries and thus reaches the gall-bladder through the general circulation. And this series demonstrates, first, that infection of the gall-bladder from the blood is through the arteries, and second, should infection reach the portal vein it is transmitted to the gall-bladder through the general circulation.

87. **Blood-Supply of the Liver.**—The point Staehlin makes is that the commingling between the hepatic artery and portal vein is established through the medium of a tremendously ramified and interposed capillary system, and in consequence of which the circulation of the liver is very much retarded. In the case reported by him, the severance of the left hepatic artery shut off the blood-supply of the left lobe of the liver completely. The effect was two-fold: locally death to the entire lobe, since the hepatic artery is the nutrient vessel, and secondly, since the hemorrhage was tremendous, a lowering of the blood-pressure sufficient to cause a voluntary arrest of the hemorrhage, yet was not sufficiently profuse to drain off enough blood to cause death. The hemorrhage from the parenchyma of the liver, though probably great, was arrested by the lowered blood-pressure due to the arterial hemorrhage from the left hepatic artery, facilitated, *a priori*, by the lower blood-pressure of the portal vein and hepatic vein. The anastomotic interchange of blood between the portal vein and hepatic vein would undoubtedly have led to a fatal termination, had both or either been severed, due to the close proximity of the vena cava; besides, the sparse supply of connective tissue and relatively poor supply of elastic fibers in the liver would have favored hemorrhage in spite of the lowered blood-pressure. Hence, since the anastomosis occurs from the hepatic artery to the portal vein, and never in the reverse, and since the hepatic artery is a small vessel, and since the circulation in the liver is normally very much retarded, and since the veins are devoid of contractible tissue, this is what happened. After rupture of the hepatic artery, the left lobe was drained and was no longer nourished. The blood-pressure was reduced, causing an arrest in hemorrhage and a stasis at the areas of commingling with the hepatic artery and portal vein. The stasis led to the formation of thrombi in the radicles of the portal vein and hepatic vein.

88. **Surgery of the Thorax.**—In so far as Quinby's experimental observations go they confirm the experience of Meltzer, Carrel and Elsberg, who find that the method of intratracheal insufflation is very safe, and rests on a firm physiologic basis. In some thirty observations, some of them as long as four hours, others during such severe operations as total right pneumectomy and esophageal sutures, Quinby states that he has never had a death due to the method of anesthesia.

89. **Treatment of Postoperative Abdominal Adhesions.**—During the past three and a half years, Crump has introduced sterile oil into over 200 abdomens. In the majority of these cases, olive oil was the one employed. Many grades and kinds have been used, owing to the fact that they had frequently to be obtained and prepared on the spur of the moment. After a careful study of the subsequent history of these oil cases, together with additional experience derived from its use in further cases, various points in which olive oil failed to fulfill all the requirements of a perfect menstruum gradually evolved. It was noted that normal surgical reaction was frequently more marked than in similar cases in which oil was not used. In a few cases, the oil seemed to fail in the prevention of postoperative adhesion (in two patients who subsequently had to be reoperated on, and in each of whom numerous adhesions were found); but, on the whole, it has been so gratifying in its minimization of the post-operative sequelæ, especially adhesions, that Crump has come to believe that its use has marked a decided advance in surgery.

92. **Bone Transference.**—In McKenty's case, the diaphysis of the tibia was entirely absent except for a conical piece of bone at either end, one attached to the upper epiphysis with its point directly downward, and the other attached to the lower epiphysis with point directed upward, each piece being from 1½ to 2 inches long. So far as could be determined by palpation the intervening space of about 6 inches in length was devoid of osseous tissue. Just external to the original scar, an incision was made from the upper tibial epiphysis to the lower, the full length of the limb. Each conical stump was isolated and its point removed by saw, leaving a flat surface of a diameter about equal to that of the fibula. The fibula was then exposed and sawn through at points opposite to the ends of the stumps and the segment moved forcibly over into a sulcus prepared for it by a little blunt dissection. One silver wire suture held each end in apposition to the stump of the tibia. The wound was closed and the leg put up in a plaster cast. Healing occurred without complication. In September, 1906, three months after operation, the man was able to walk on the leg. The final result is all that could be expected. The upper end of the transferred segment has been displaced outward and has formed the bony union with both tibia and fibula. Motion at the ankle joint is considerably less than normal.

94. **Modified Viscera Forceps.**—The holding portion of Schoenberg's forceps consists of rubber-covered incomplete rings, which permit rubber tubing to be put on or removed, when replacing becomes necessary. The jaws of the forceps meet and lightly compress each other when closed at the first catch on the handle, and when closed to the third or fourth catch the hold is firm. Schoenberg says that these forceps may be made use of for catching and holding the tube, ovary, round ligament, bowel, uterus, or any of the abdominal viscera without injury to the delicate peritoneum. It may be used to advantage in picking up an appendix through a small incision, or holding a bound-down, gangrenous appendix after slightly liberating it from its bed of adhesions. Thus the appendix can be ligated and removed with greater ease through a smaller abdominal opening, and when dealing with an acutely inflamed appendix or tube with less disturbance to the protective adhesions. By the aid of these forceps, therefore, the intra-abdominal work can be done with greater ease, through a smaller opening, with less intra-abdominal handling, and with no injury to the delicately covered structures.

95. **Peritoneal Director.**—Church's peritoneal director consists of a flat-spoon director with a handle at right angles, so shaped that 3 inches of fat in the abdominal wall will not interfere with its being easily inserted and held in a proper position. Its use is readily acquired. After the initial incision is made in the peritoneum the director is inserted in the cut and pushed along the line of the proposed incision close to the under side of the peritoneum, which is cut rapidly with scissors or knife. In sewing the peritoneum this instrument can be used for the same purposes as the Beck spoon, and acts better in fat subjects for it can be held level, which is impossible with the latter instrument. The advantages of the peritoneal director may be stated briefly as follows: 1. It is safer than the usual method in enlarging the primary opening in the peritoneum. 2. It saves time. 3. It can be used to keep back intestines in closing the peritoneum.

Archives of Ophthalmology, New York

November

98 Lymphocytosis as a Diagnostic and Prognostic Sign in Cases of Iridocyclitis After Perforating Injury. H. S. Gradle, Prague.
99 Successful Removal of a Piece of Iron from the Vitreous. W. N. Sharp, Indianapolis.
100 Concentric Contraction of the Pupil. P. Fridenberg, New York.
101 A Rare Form of Teratoma Orbitæ (Fetus in the Orbit, Orbitopagus Parasiticus). G. Mizuo, Osaka, Japan.

Interstate Medical Journal, St. Louis

November

102 Spondylitis Typhosa (Typhoid Spine). A. Frick, Chicago.
103 Ear Symptoms in General Diseases. J. J. Kyle, Indianapolis.
104 Pre-Hippocratic Medicine. J. D. Comrie, Edinburgh.
105 Present-Day Physiology of the Stomach. C. Shattinger, St. Louis.
106 Anamnesia Syphilitica. F. R. Fry, St. Louis.

Journal of the Missouri State Medical Association, St. Louis

November

107 The Surgeon and His Work. F. Reder, St. Louis.
108 *Surgical Treatment of Uterine Myomata. W. J. Frick, Kansas City.
109 Psychotherapy *vs.* Eddyism. R. William, St. Joseph.
110 *Instruction of the Public in Antituberculosis Measures by a Traveling Car Exhibit. G. Homan, St. Louis.
111 Fallacies in the Understanding of Antiseptics and Germicides, Especially Bichlorid of Mercury. M. Pitzman, St. Louis.

108. **Uterine Myomata.**—The technic which Frick employs differs in no essential particular from that described by Dr. Howard Kelly. The abdominal cavity is walled off with gauze, the uterus delivered and protected with gauze wrung out of warm salt solution. Incision is made in a generally transverse direction over the most prominent part of the tumor. The myoma is shelled out and the incision closed by a figure-of-eight hemostatic suture of No. 1 iodized catgut. This effectively controls the oozing. The line of sutures is covered as well as possible with the uterine peritoneum or with a fold of the broad ligament if feasible, by Lembert suture of No. 0 iodized catgut, the knots being buried as well as possible. This second line of sutures is important in reducing the danger of adhesions.

110. This article appeared in THE JOURNAL, Sept. 24, 1910, p. 1072.

Providence Medical Journal

November

112 Treatment of Infantile Paralysis. F. E. Peckham, Providence.
113 Parent's Duty to Instruct His Son in Sexual Hygiene. W. H. Peters, Providence.
114 Drainage After Suprapubic Cystotomy. H. Terry, Providence.
115 Choice of Routine Method for Administering Ether. A. H. Miller, Providence.

Louisville Monthly Journal of Medicine and Surgery

November

116 Glanders. W. O. Roberts, Louisville.
117 The Owen Bill and Its Opponents. S. A. Knopf, New York.

Bulletin of the Johns Hopkins Hospital, Baltimore

November

118 The Special Field of Neurologic Surgery. H. Cushing, Baltimore.
119 *The Cammidge Test in Experimental Pancreatitis and Other Conditions. G. H. Whipple, B. S. Chaffee and R. F. Fisher, Baltimore.

119. **Cammidge Test in Experimental Pancreatitis.**—As a result of their experiments the authors conclude that the Cammidge test is of little value in establishing a diagnosis of acute pancreatitis in dogs. If the test is negative, it is pretty strong evidence against an acute pancreatitis. The Cammidge test is of even less value in the condition of chronic pancreatitis in dogs and may be consistently absent even in extreme grades of this disease. A positive Cammidge test is not infrequent in normal dogs and men. The Cammidge test is almost constantly present in chloroform poisoning in dogs—a condition in which there is extensive liver necrosis and cell autolysis. The test may be present in cases of pneumonia or in any condition in which there is active cell destruction and autolysis. The Cammidge test may be produced experimentally almost at will by intraperitoneal injections of hydrolytic cleavage products. These split products may be prepared by boiling pneumonic lung tissue (dog or man), or thymus for hours with dilute acid, neutralizing, filtering and concentrating to a clear fluid. The melting point of the crystals varies under different conditions indicating that the substance or substances are not constant. The method is open to various errors and too much depends on the personal equation particularly in the interpretation of the various crystals.

Maryland Medical Journal, Baltimore

November

120 Mercurials in Treatment of Tuberculosis. P. Kintzing, Baltimore.
121 Prophylaxis of Mental Disorders, and the After-Care of Convalescent Patients. A. P. Herring, Baltimore.
122 Plea for the Betterment of Health in Country Districts. C. W. G. Rohrer, Baltimore.
123 Care of the Demented and Untidy Insane. F. J. Flannery, Baltimore.

Buffalo Medical Journal

November

124 The Purins. H. R. Hopkins, Buffalo.
125 Astigmatism as a Cause of Gastric Diseases. G. M. Gould, Ithaca, N. Y.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

November 5

1 Clinical Measurement of Diastolic Blood-Pressure and Cardiac Strength. L. Brunton.
2 Greek Medicine in Rome. C. T. Allbutt.
3 *Strangulated Omental Hernia with Very Few Symptoms. A. Z. C. Cressy.
4 Tetanus Treated by Chloretone. R. A. Hobbs and E. W. Sheaf.
5 The Nervous System in Chronic Alcoholism. F. W. Mott.
6 *Therapeutic Use of Alcohol Vapor Mixed with Oxygen. W. H. Willcox and B. J. Collingwood.
7 *Pulmonary Thrombosis. E. Glynn and R. E. Knowles.
8 *Method of Distinguishing Dead from Live Leukocytes. C. Achard.
9 Effects of Artificial Respiration on the Stillborn Infant. J. A. B. Hicks.
10 Variation in the Sizes of Red-Blood Cells. C. Price-Jones.
11 Polychromasia, and the Pathology of Hematomata. G. R. Ward.

12 *Action of Oleic Acid and Its Soaps on the Blood. A. E. Boycott.
13 *Pathogenesis of Hereditary Hemophilia. T. Addis.
14 *Absence of Altmann's Granules from Cells of Malignant Growths. H. Beckton.
15 Chloroform Necrosis of the Liver. G. W. Goodhart.
16 Diagnostic Use of the Complement-Fixation Method. A. Wassermann.
17 Practical Value of the Wassermann Reaction. H. W. Bayly.
18 Complement Fixation in General. R. Muir.
19 Structure of Complement in Relation to Deviation. J. H. Smith.
20 Diagnosis of Syphilis by Complement Deviation. T. W. B. Smith.
21 Individual Properties of Complement and Organ Extract. I. McKenzie.
22 Comparison of the Original Wassermann Reaction with Some of Its Modifications. H. R. Dean.
23 Guidance Afforded by Complement Fixation Methods. L. W. Harrison.
24 Lecithin and Cholesterin as Reagents for the Detection of Syphilitic Serums. C. H. Browning.
25 Complement Deviation and Carcinoma. J. O. W. Barratt.

3. **Strangulated Omental Hernia.**—A man, aged 60, complained of griping pain all over the lower abdomen; the pain was general, not tender near the appendix. Cressy found a large swelling in the lower inguinal region the size of a fist, solid and hard, tender and without impulse. He cut down on the mass. It was indurated and showed no landmarks. Presently a black mass came into view, and slitting up the cavity in which it lay, he laid bare as much as three fingers of gangrenous omentum. Freeing the internal ring, and passing his finger into the abdomen, he felt a large hard mass extending as far as the middle line like a sausage. With difficulty freeing this he got it through the opening, and found that it was a mass of gangrenous omentum as big as two fists. Having freed it all around, he ligated it off close to the bowel; the left testicle and cord were also removed.

6. **Alcohol Vapor Mixed with Oxygen.**—Willcox and Collingwood call attention to the remarkable stimulant effect on the heart and circulatory system produced by the inhalation of oxygen containing alcohol vapor. When this combination is used, it can be readily demonstrated in cases of cardiac failure that the addition of alcohol vapor to the oxygen administered produces a stimulant effect on the circulatory system much greater than that produced by the breathing of oxygen alone. These are the good effects of the oxygen plus an additional marked stimulant effect on the circulation caused by the contained alcohol vapor. Oxygen which had been bubbled through absolute alcohol contained in an ordinary wash-bottle was administered in several cases of illness in which cardiac failure was a prominent symptom, and it was found that the mixture produced a marked stimulant effect on the heart and circulation, decidedly greater than that produced by oxygen alone. In some of these cases the administration appeared to have been the cause of the prolongation and saving of life. In cases of pneumonia with cardiac failure the mixture of oxygen and alcohol vapor was found to be a valuable remedy.

7. **Pulmonary Thrombosis.**—Glynn and Knowles have found that spontaneous thrombosis is much commoner than embolism, in the proportion of 8 to 1 in 1,200 post-mortem examinations from a single hospital. They believe that an unaccountable acceleration of the pulse or respiration rate, beginning in the second week after a major operation, especially abdominal, and associated with slight pyrexia, suggests the possibility of spontaneous thrombosis and of a sudden fatal termination about the third week. Cases of spontaneous thrombosis are overlooked from the assumption that only embolism can cause death in a few minutes, from neglect to remove and harden the heart and lungs together, and trace the distribution of the thrombi *in situ* in properly hardened specimens, and especially from neglect to make a thorough microscopic examination. Even the association of the pulmonary clots with others in the systemic veins does not necessarily prove that the former are embolic. Both may have arisen spontaneously and separately from similar causes.

8. **Distinguishing Dead from Live Leukocytes.**—Achard reports some researches on the distinction which may be drawn between dead and living leukocytes by using neutral red. Living leukocytes are uncolored, or contain red-stained or intraprotoplasmic vacuoles or granulations. Dead leukocytes show their nuclei red-brown, and no intraprotoplasmic coloration. Two solutions are used: the one is physiologic salt solution with 6 per 1,000 of sodium citrate; the other is a physiologic salt solution with 1 per 1,000 of neutral red. Mix in a tube 10 drops of each solution and add 1 drop of blood, or from 1 to 4 drops of the sediment of a centrifugalized exudate containing white cells; the tube is placed in the incubator and kept at the temperature of 37 C. for twenty minutes, then the liquid is examined in a glass cell, and the living and dead leukocytes are separately enumerated. Achard says that in the circulating blood there are no dead leukocytes, even in the gravest diseases. If occasionally a few dead leukocytes are seen, fresh preparations must be made again and examined within five minutes, in order to avoid accidental injuries of the white cells; then they generally yield no nuclear staining. In various exudates dead leukocytes are not scarce, especially in cases of suppuration. In abscesses, the number of dead leukocytes suddenly decreases after the incision. In acute meningitis, it appears that the variations in the leukocytes are valuable for prognosis; their disappearance is a good sign, and their increase an unfavorable indicator. The red staining of the nucleus is also observed in recently dead and not yet disintegrated cells. Therefore, a few stained nuclei are found in old suppurations; for instance, in tuberculous empyema, among a great deal of indistinct leukocytic remains.

12. **Action of Oleic Acid on Blood.**—Rabbits repeatedly inoculated with soaps of oleic acid subcutaneously became anemic. Blood regeneration was defective; there was no clear evidence that blood destruction was excessive. Rats fed with oleic acid showed no changes in the blood.

13. **Hereditary Hemophilia.**—Twelve cases were investigated. In all the coagulation of the blood was delayed. In those individuals in whom the symptoms were most marked the blood took an hour or more to coagulate; in one case in which the tendency to prolong hemorrhage was less marked the coagulation time was thirty-six minutes, and in the slight cases it was about fifteen minutes. This delay in coagulation was the only pathologic factor constantly present, and is in itself sufficient to explain all the symptoms. There are good grounds, therefore, for regarding it as the proximate cause. The cause was looked for in connection with the calcium, the thrombokinase, or the prothrombin. Various quantities of calcium were added to hemophilic plasma, but no amount reduced the coagulation time to normal. Calcium was, therefore, not the cause. With various amounts of thrombokinase the same result was obtained, except when very large quantities were added, when coagulation was almost instantaneous in both normal and hemophilic plasmas. But with lesser amounts, even such as were sufficient greatly to accelerate the coagulation of normal plasma, the coagulation of the hemophilic plasma still took much longer than the normal. Further, there was found to be as much thrombokinase in hemophilic serum as in normal serum, and as much could be extracted from hemophilic blood corpuscles as from normal corpuscles. Thrombokinase was, therefore, not the cause. There was no quantitative deficiency as regards the prothrombin in hemophilic plasma, but a qualitative difference was present, which showed itself in the unduly long time required by the hemophilic prothrombin to change into thrombin in the presence of calcium and thrombokinase. That this fault in the prothrombin was the sole cause of the delay in coagulation was shown by the fact that very small quantities of normal prothrombin when added to hemophilic plasma reduced the coagulation time to the normal. The cause of hemophilia is, therefore, says Addis, an inherited peculiarity in the constitution of the prothrombin whereby its activation into thrombin is retarded.

14. **Altmann's Granules and Malignant Growths.**—Excluding new growths originating in cells not normally containing Altmann's granules, Beckton says, absence of granules from all the essential cells of a new growth indicates malignancy. Presence of Altmann's granules in all or nearly all the essential cells of a new growth, is usually associated with non-malignancy or only with malignancy of a special kind or limited degree (thyroid, ovary). In a tumor, the diagnosis of

which lies between inflammation and sarcoma, presence of Altmann's granules indicates the former, absence the latter.

Lancet, London

November 5

26 Greek Medicine in Rome. T. C. Allbutt.
27 Traumatic Neuroses. T. R. Glynn.
28 *Desmoid Tumors. R. Morison and H. Drummond.
29 Cases Treated by Vaccine of Unknown Organisms. E. C. Bousfield.
30 Primary Acidosis; Recovery. S. Bontor.
31 *Use of the Faradic Current in the Treatment of Persistent Aphonia Following Laryngitis. F. Hernaman-Johnson.
32 *Phlegmasia Alba Dolens, Followed by Pulmonary Embolism and Infarction of the Lung; Recovery. J. C. Curtis.
33 *Influence of Quinin and Morphin on Phagocytosis. H. L. Smith.

28. **Desmoid Tumors.**—According to Morison and Drummond there are certain tumors—desmoids—originating in the abdominal wall, chiefly in the upper half of the rectum muscle, but also in connection with the other muscles, which are of considerable clinical importance. They are likely to be mistaken for growths in the abdomen, unless the possibility of their occurrence is remembered. Their association with pregnancy is so frequent as to constitute more than a coincidence. Possibly traumatism, by muscle stretching or tearing, is of etiologic significance. A firm, but not tender, sausage-shaped tumor, possessed of some mobility, across, but not in the direction of the fibers of the relaxed muscle with which it appears to be associated, becoming fixed when that muscle is made tense, and occurring in a woman recently pregnant, is a desmoid tumor. The treatment is to excise the growth at once, along with a free margin of the surrounding structure, including the peritoneum underlying it.

31. **Faradic Current in Aphonia.**—A study of two cases of aphonia has led Hernaman-Johnson to form conclusions regarding the pathology and treatment of persistent post-catarrhal aphonia. The larynx is primarily a mechanical device for the production of vocal sounds, and depends for its proper functioning even more on the integrity of its muscles and nerves than on the healthiness of their covering. In chronic catarrh of this organ, the muscles become secondarily affected, and the delicate terminals of the motor nerves in all probability undergo an inflammatory degeneration. An acutely inflamed mucosa doubtless demands local sedative applications; and even when the trouble has become chronic, astringent sprays, paintings, etc., can often play an important part. But the tendency in many chronic cases is for the mucous engorgement to disappear to a great extent, whereas the damage to the neuromuscular apparatus remains. Under such circumstances it is unreasonable to expect a cure by the ordinary means. On the other hand, improvement may be looked for from such measures of "natural therapy" as produce benefit in similar pathologic conditions elsewhere, e. g., in the form of facial palsy which is the result of exposure to the cold. Hernaman-Johnson says that in treating paresis of laryngeal muscles by faradization, the secret of success lies in the regular and persistent use of mild currents, which are not calculated to produce violent contractions of opposing healthy muscles. If carefully applied for a prolonged period this form of electricity exercises a selective action on the affected structures and eventually restores their tone. Remarkable as are the results in suitable cases, however, it must not be regarded as a panacea for each and every form of catarrhal aphonia. When the laryngoscope shows marked swelling and congestion of the cords, the mucous membrane must be attacked vigorously on orthodox lines. Nevertheless, even when the mucosa is the part most at fault, the judicious use of the interrupted current, he declares, forms a valuable adjunct to routine treatment.

32. **Phlegmasia Alba Dolens.**—Five days after delivery, Curtis's patient developed phlegmasia alba dolens in the left leg. Under treatment she progressed favorably for seven days when she was seized with violent pains in the left chest and shortness of breath. The respirations were 72; pulse, 108, regular, but very feeble; the temperature, 100 F. The extremities were cold. She complained of intense pain over the epigastrium, precordia, and lower axilla. An impaired note was found over the lower part of the axilla, and the breath sounds over this area were badly transmitted; no friction sound was heard. A soft systolic murmur could be heard over the pulmonary area and the second sound was accentuated. She suffered from retching and some vomiting, and the smallest amounts of liquid nourishment caused great pain over the precordia and lower axilla. As the stomach was dilated this was attributed to pressure on the diaphragm interfering with cardiac and respiratory movements. Hot water bottles were applied to the feet and hot applications to the chest. She was given iced milk and soda-water with brandy in small quantities at frequent intervals. She was also given the following mixture every four hours:

R	gm. or c.c.
Bismuth carbonate ..... gr. x	65
Aromatic spirits of ammonia..... m. xv	1
Compound tincture of cardamoms..... m. x	60
Mucilage, q. s., and water..... ʒi	30

On the following day the vomiting had ceased. The respirations were 66; pulse, 102, and temperature, 101 F. She still had considerable pain over the lower axilla, and a marked friction sound could be heard over this area. It was noticed that the swelling in the left leg had diminished considerably; it was much softer and free from pain. The pulmonary systolic murmur could still be heard, although it was not so marked. Three days later there was a considerably impaired note over the lower half of the upper lobe, and the whole of the lower lobe and axilla, with marked tubular breathing, bronchophony and pectoriloquy. The temperature was 99 F., respiratory rate 60, and pulse 96, regular, and of medium tension. The pulmonary sounds were clear. There was good air entry at the base, but dulness persisted over the axilla, the lower half of the upper lobe, and the upper half of the lower lobe; and over these areas there were still tubular breathing, bronchophony and pectoriloquy. There was still an occasional dry cough but no expectoration. The temperature was normal. The left leg had resumed its normal size. The lung symptoms gradually cleared up.

33. **Influence of Quinin on Phagocytosis.**—Smith made a series of researches to ascertain, if possible, the truth of the statement that quinin, like alcohol in excess, inhibits phagocytosis, and is therefore contraindicated in septic conditions. The opsonic index was taken as a basis for the work, with the additional factor of a solution of quinin and morphia. The very soluble acid hydrochlorid of quinin was selected because it is much less irritating than the sulphate and contains 8 per cent. more quinin. Morphin hydrochlorid, 1/8 grain, was added to each 10 grains of the quinin salt. It was roughly calculated that a 10-grain dose given to a person weighing 140 pounds, if entirely absorbed, would represent in the blood a proportion of 1 to 7,500. The influence of this solution (1 to 7,500, equivalent to a 10-grain dose) on the phagocytosis of different kinds of pathogenic organisms (e. g., streptococci, staphylococci, pneumococci, *B. coli*, *B. influenzæ*, *B. pseudodiphtheriæ*, and *B. tuberculosis*) was contrasted with stronger and weaker solutions to ascertain the effect of varying doses. In the majority of the eleven sets of experiments, there was an increased phagocytosis, always most marked with the 10-grain dose solution. Instead of inhibiting phagocytosis, the addition of quinin and morphia, in what may be considered the "ideal" dose, greatly increased it. Smaller doses in all the groups were less effective, and one important fact was clearly demonstrated—namely, that very large doses (30 and 40 grains), instead of increasing, actually diminished phagocytosis, sometimes to the extent of 50 per cent.

Clinical Journal, London

November 2

34 Complications of Gall-Stones. C. H. Fagge.
35 Late Results of Operations on the Stomach. H. J. Paterson.
36 The Appendix in Middle and Later Life. E. M. Corner.

Medical Press and Circular, London

November 2

37 Respiration in Health and Disease. J. F. H. Dally.
38 Specialists and Specialisms and Their Relationships to General Practice. P. S. Abraham.
39 Physical Aspects of Blood-Pressure. T. L. Brunton.
40 Uniformity of Method for Medical Inspection. J. Kerr.

Annales de Gynécologie et d'Obstétrique, Paris

October, XXXVII, No. 9, pp. 577-720

41 *Non-Cystic Ovarian Tumors. M. Mériel.
42 *Stenosis of the Pylorus from Muscular Hypertrophy. P. Fredet and L. Guillemot.
43 *Megacolon. M. Patel.

41. **Non-Cystic Ovarian Tumors.**—Mériel discusses all kinds of ovarian tumors outside of cysts. He has found only seventeen fatalities in the 289 operative cases on record since 1900, the mortality thus being from 4 to 4.5 per cent. The percentage of permanent cures has been 15 per cent. in the 372 cases compiled by Estor between 1881 and 1900 and the proportion is much higher in later series. The figures show that the operative mortality is no higher when both ovaries and the uterus are removed. The final outcome, he states, is much better for these non-cystic ovarian tumors, especially the malignant, than with cancer of other genital organs or organs elsewhere. This favorable prognosis includes both the operative and remote results, and it encourages early operation in case of a solid, movable tumor of the ovary. As there is no reliable sign to differentiate the benign from the malignant tumors, there should be no delay; the abdomen once opened the surgeon can then decide whether to continue or abandon the operation. Bilateral ovariotomy can be done without interrupting a pregnancy; after delivery the ovarian tumor should be removed without delaying for more than two or three days. The favorable figures shown by the latest statistics permit more initiative than in the past. Metzger has compiled 150 cases of ovarian cancer complicating gastric cancer, and Hartmann has reported a case in which he successfully removed a cancer in both ovaries and the primary cancer in the pylorus, the patient, a woman of 38, leaving the hospital in good condition; the operations were done in two sittings with a month's interval. In Boeckel's case two large cancers were removed from the ovaries; necropsy a few months later disclosed an unsuspected cancer in the stomach.

42. **Stenosis of the Pylorus in Infants from Muscular Hypertrophy.**—Fredet and Guillemot do not consider the anatomic lesion as necessarily entailing fatal impermeability; the superposed factors are the dangerous elements—the inflammatory swelling of the mucosa and spasm of the hypertrophied muscle which aggravate the stenosis. These latter factors may be influenced by medical treatment, resting the stomach by feeding a teaspoonful at a time, merely iced boiled water at first, and combating the spasm by lavage, hydrotherapy and local heat. The dietetic measures are the most important; the stomach will sometimes tolerate up to 5 gm. of breast milk at a time. These small amounts should be kept up for about two weeks and then the amount gradually increased. The food with which he has been most successful is a milk gruel or malt soup. Sedatives are given to reduce the tendency to spasm. In the severe forms lavage may be useful but it sometimes aggravates the weakness; in one case it seemed to be responsible for the collapse observed. In case operative treatment becomes necessary, partial pylorotomy by a straight longitudinal incision down to the mucosa, enables the muscular fibers to spread. The lips of the longitudinal incision are then drawn apart and sutured together again to form a transverse line. The two children on whom this technic has been applied recovered at once and are now healthy and well developed; Weber has reported two similar cases. In 185 operations for this form of stenosis the immediate mortality was 47 per cent., but the mortality was only 26.31 per cent. in the thirty-eight cases in the last three years in which the operation was this partial pylorotomy. Fredet and Guillemot warn especially against letting the child become chilled during the operation. The outcome is immediately favorable in the children without existing gastro-enteritis, but when this is present convalescence is a little retarded but not so much as might be expected. Only two of the fifty-three children operated on according to this preferred technic of posterior gastro-enterostomy succumbed later to progressive debility.

43. **Megacolon.**—Patel gives a historical sketch of idiopathic dilatation of the large intestine or Hirschsprung's disease, and reviews 223 cases with an operation or necropsy; all but seventy-three were in children. About 57 per cent. of the seventy-four children operated on and 57 per cent. of the forty-one adults were cured by the operation. His review shows that the mortality grows less as the children increase in years; under the age of 2 there were thirteen deaths for thirteen operations, some merely an exploratory laparotomy; from 2 to 5, only four of the fourteen children survived, but between the ages of 5 and 15 there were twenty-seven recoveries to ten deaths and between 15 and 50 years of age there were twenty-two recoveries to eight deaths; after the age of 50 only one recovery is reported to ten deaths. He thinks that it is not enough to fasten or take up a fold in the colon, while resection is too serious; unilateral exclusion gives the best results from all points of view.

Bulletin de l'Académie de Médecine, Paris

October 18, LXXIV, No. 32, pp. 197-220

44 *Paralysis of the Recurrent Laryngeal Nerve and Mitral Stenosis. E. Boinet.

44. **Paralysis of the Recurrent Laryngeal Nerve and Mitral Stenosis.**—Boinet reports two cases and discusses what has been published on this subject by Osler and others, all proving that recurrent paralysis is liable to accompany mitral stenosis, either from direct compression of the left recurrent nerve by the left auricle or by traction downward from the dilated and hypertrophied right ventricle or from both these factors. This cause for the paralysis should be borne in mind after exclusion of the usual causes.

Lyon Chirurgical, Lyons

November, IV, No. 5, pp. 421-512

45 *Spinal Anesthesia in Gynecology. (Etude sur la rachistovainisation.) Violet and Fisher.
46 Operative Treatment in Cholelithiasis. (Du choix de l'intervention dans la lithiase biliaire.) G. Cotte.
47 Traumatic Dislocation of the Scaphoid Bone in the Foot. E. Destot.

45. **Spinal Anesthesia.**—Violet and Fisher have compiled 30,000 cases from the literature to which they add 270 cases from Pollosson's gynecologic clinic, and discuss the special indications, technic and results. They regard raising the pelvis as decidedly dangerous at first, while the drug is diffusing, and this phase may last for twenty or thirty minutes. The great danger of the spinal technic is the liability to stoppage of the respiration; this occurred twice in their 270 cases, but they were able to revive one of the patients. In the fatal case necropsy disclosed an unsuspected pleural effusion which should have contraindicated general anesthesia, especially by the spinal technic. Another fatality was evidently the direct result of lowering the patient's head too soon after the injection; some of the fluid had been lost in making the injection and the pelvis was raised at once. The skin was incised seven minutes after the injection and the patient, an obese woman with cancer of the cervix uteri, stopped breathing and could not be revived. They list further the details of thirty-six other fatalities in European literature following injection of stovain, tropacocain, or novocain for spinal anesthesia. In twenty cases the fatal syncope occurred within fifteen minutes and in others not until after several hours. In four of the cases suppurative meningitis was evidently due to lack of asepsis in the technic. In four other cases mechanical interference with the action of the lungs from an effusion was responsible for the fatality; in fourteen cases the cachexia or infection was already in a dangerously advanced stage. In seven of the total thirty-six fatalities the stovain must be directly incriminated, they think. Paralysis of legs or sphincters developed in sixteen cases, generally subsiding after a few days or months, but entailing fatal complications in bladder or kidney in two cases and fatal infection from an eschar in a third, while in three cases the paralysis or ataxia seems to be permanent. Study of these cases shows a pre-existing predisposition—syphilis or alcoholism—which should have contraindicated the method, or else the dosage was too large or asepsis violated. The spinal method, the authors state, is particularly adapted for gynecologic operations, as the field is all in one plane, innervated from the same segment of the spine; the relaxation of the muscles is complete; there is no vomiting; the operative shock is less than with other technics and there is no irritating action from the anesthetic on the lungs;

the patients can be fed earlier and convalescence is shortened. But the technic requires skill and the method has its indications and contraindications. Among the latter are strangulated hernia, dating from several days, septicemia and tuberculosis—in several cases the spinal injection seemed to localize the trouble in the meninges; dyspnea of mechanical origin, pregnancy, arteriosclerosis, syphilis, tabes or any history of a cerebrospinal affection.

Semaine Médicale, Paris

November 2, XXX, No. 44, pp. 517-528

48 *Herpes of Skin and Mucous Membranes. C. Fernet.

48. **Herpes.**—Fernet explains herpes as a specific trophoneurotic affection, differentiated by its causes, its mode of action and the objective findings. The direct immediate cause of herpes is microbian toxi-infection, generally due to the pneumococcus. Other causes sometimes incriminated are only predisposing. Besides zona, the herpes of the face, trunk and limbs, he accepts herpes of the throat, commonly called herpetic angina, and herpes of the lungs, commonly called fibrinous pneumonia. Pneumonia is thus, according to his conception, a pneumococcus toxi-infection of the pneumogastric nerve and the inner surface of the lung, and he reports and analyzes a number of examples to sustain this view.

Berliner klinische Wochenschrift

October 24, XLVII, No. 43, pp. 1957-2004

49 *Tuberculosis in Prussia During 1909. (Neuer Statistik zum Kampfe gegen die Tuberkulose.) B. Fränkel.
50 *Treatment of Diseased Ovaries and Fallopian Tubes. (Wandlungen und Fortschritte in der Behandlung der chronisch-entzündlichen und -eitrigen Erkrankungen der Gebärmutteranhänge.) L. Landau.
51 Semicentennial of the Berlin Medical Society and Pathologic Anatomy. D. v. Hansemann.
52 Interstitial Pulmonary Emphysema. A. Fraenkel.
53 *Apparent and Actual Azoöspermia. (Zur Würdigung der Spermabefunde für die Diagnose der männlichen Sterilität.) P. W. Fürbringer.
54 *Mishaps with Serotherapy. (Zufälle bei der Serumtherapie.) G. Jochmann.
55 Antistreptococcus Serum and Streptococcus Immunity. W. Zangemeister.
56 Experimental Research on Erect Gait. (Untersuchungen über den aufrechten Gang.) H. Gerhartz.
57 *Ehrlich's "606." (Organotrop—Spirillotrop.) F. Lesser.
58 Shape of the Stomach. (Die Grundformen des normalen und pathologischen Magens und ihre Entstehung.) E. Schlesinger.
59 The Roentgen Ray in Dermatology. (Indication und Methodik der Röntgenbestrahlung der Hautkrankheiten.) A. Alexander. Commenced in No. 42.
60 Introduction of New Drugs, Etc. (Ueber die Einführung neuer Arzneimittel und Verwandtes.) H. Kohn.

49. **Progress in the Campaign Against Tuberculosis.**—Fränkel states that the statistics for Prussia show that the total deaths from tuberculosis in 1909 were 9.11 per cent. of the total mortality, against 9.13 per cent. in 1908. There has been a constant decline since 1875, when the deaths from tuberculosis totaled 88,283, against 60,871 in 1909, while the population in this period has increased from 28,000,000 to 39,000,000. The number of tuberculous individuals receiving institutional treatment has increased during this period from less than 12,000 to over 102,000, but the institutions for the advanced cases are still shunned as of yore. Of the 42,232 tuberculous insured given a course of sanatorium treatment, 35,131, that is, 83 per cent., regained their earning capacity. This regaining of earning capacity persisting for five years and over is recorded for 27 per cent. in 1897, and this percentage has increased constantly up to 46 per cent. in 1905. Besides the three stages of the Turban classification, the statistics now embrace a stage O; this represents "a more favorable condition than stage I."

50. **Diseased Adnexa.**—Landau reviews the changes and progress realized in the treatment of chronic inflammation or suppuration in the uterine adnexa, and cites his own experience. His figures seem to sustain his views in regard to the advantages of abdominal operating for uncomplicated affections of the adnexa, unilateral or bilateral, while the radical vaginal route is reserved for the cases with complications, preferably the abdominovaginal technic. The mortality in his 780 abdominal operations was 2 per cent.; by the vaginal route alone, the mortality was 4.2 per cent. in 543 cases of chronic suppuration or inflammation since 1893, while it was 7.6 per cent. in ninety-two cases with complicating pelvic abscess. Prophylaxis of adnexitis includes prevention or early cure of gonorrhea and of sepsis after abortion and childbirth, and efforts to ensure asepsis in minor gynecologic measures, curetting, etc.

53. **Apparent or Actual Azoöspermia.**—Fürbringer warns physicians not to be too hasty in concluding as to the existence of azoöspermia; a second examination may give opposite findings from the first. He has encountered about a thousand cases of actual azoöspermia and also numerous cases in which he had to reverse the first diagnosis. The lack of motility is the essential element for the diagnosis. The movements of the spermatozoa may be impeded by coagulation of the medium but they regain their motility, if normal, as the medium is liquefied by heat or otherwise. Hot weather and extreme cold may also affect the motility of normal spermatozoa, as may also the presence of an antiseptic or indifferent powder. In many cases of assumed sterility in the husband some gynecologic trouble in the wife was finally discovered, notwithstanding the assurance of the gynecologists to the contrary at first.

54. **Mishaps and Hypersusceptibility with Serotherapy.**—Jochmann has had only two cases of threatening collapse in his extensive experience with serotherapy in various diseases; these were both after intravenous injection of large amounts of antistreptococcus serum in scarlet fever. An existing heart disease in one case showed signs of aggravation after an intravenous injection of 50 c.c. of antistreptococcus serum, and he now regards heart disease as contra-indicating the intravenous route. He urges the production of more concentrated serums, as the untoward effects are observed with the larger doses, and further pleads that other animals besides horses should be utilized in making the serums—mules, goats, asses and cows—so that by interchanging the serums in cases requiring repetition of the doses it may be possible to avoid all danger of hypersusceptibility. Netter has reported that manifestations of serum-sickness have been reduced from 20 to 3 or 4 per cent. in his experience with 600 cases since he has made it a routine practice to inject or give by the mouth from 0.75 to 1 gm. (from 12 to 15 grains) of calcium chlorid for three days in succession.

57. **Ehrlich's "606."**—Lesser here states that this preparation exerts the same action as arsenic in other forms in other diseases as well as in syphilis, only in a much simpler, speedier and more energetic manner. The general condition improves, the patients regain appetite and their pallor yields to the tint of comparative health. This organotropic effect, as he calls it, is also the main factor, in his opinion, in its efficacy in syphilis, as it reinforces the natural defensive processes. He doubts whether the direct destructive action of the new remedy on the spirochetes in the body is the principal factor in the cure of syphilis. The dosage should be selected with the aim to influence the natural defensive processes and increase the vitality of the cells without reference to any direct destructive action on the spirochetes. It has been his impression from his observation that the symptoms and the transformation of the Wassermann reaction are not influenced any more by large than by moderate doses. If the reaction is still positive six or eight weeks after the first injection, it might be advisable to repeat the dose. A negative reaction seems to indicate, he thinks, at least a temporary inactivity on the part of the spirochetes.

Centralblatt für die Grenzgebiete der Med. und Chir., Jena

October 5, XIII, No. 17, pp. 641-688

61 *Non-Operative Treatment of Cancer. (Bakterio- und Serotherapie des Carcinoms. Die Anästhesie- und Saugtherapie.) E. Venus. Commenced in No. 15.

October 15, No. 18, pp. 689-720

62 The Sensibility of Internal Organs. A. Neumann. Commenced in No. 11.

October 31, No. 19, pp. 721-768

63 *Typhoid Suppuration in the Kidneys. (Die suppurativen Nierenkomplikationen des Typhus abdominalis mit bes. Berücksichtigung ihrer chirurgischen Bedeutung.) E. Melchior. Commenced in No. 18.

61. **Non-Operative Treatment of Cancer.**—Venus lists 367 articles on the treatment of cancer with serotherapy, anes-

thetics or suction. It is possible that a specific serum may yet be produced, but the results to date, he says, have been disappointing. The best results have been obtained with the epithelium serum, based on cytotoxic action, and further research is indicated in this line. Serotherapy with streptococcus or mixed cultures has proved ineffectual, although in inoperable sarcoma or after operation, Coley's fluid might be given a trial. No benefit seems to have been obtained with injection of local anesthetics, which Spiess and Schleich have tried. Ritter has applied suction hyperemia, but his silence since his last favorable announcement, three years ago, does not speak very favorably for the method.

63. **Typhoid Suppuration of the Kidney.**—Melchior has compiled fifty-six reports or discussions of suppurative complications on the part of the kidneys with typhoid, with special regard to their surgical treatment, discussing in turn abscesses, pyelonephritis, pyonephrosis and abscess formation in the tissues around the kidney, as well as typhoid infection of hydronephrosis and of a kidney containing concrements. Among the numerous cases described are some which show the possibility of long latency before serious local symptoms develop, ten years in Meyer's and six years in Greaves' case. In both, however, careful examination would probably have revealed the suppuration long before, while with typhoid bone abscess the interval may be absolutely free from symptoms. Post-typhoid pyuria should always be regarded as a serious symptom, and the source for the pus should be determined so that proper treatment can be applied at once. Typhoid suppuration seems to be rather benign in nature; in Greaves' case the typhoid pyonephrosis healed under mere drainage without a fistula. Nephrectomy should be considered with pyonephrosis destroying the organ, and also with destruction from suppuration with kidney stone. The patients with these post-typhoid complications are generally chronic bacilli-carriers.

Deutsche medizinische Wochenschrift, Berlin

October 27, XXXVI, No. 43, pp. 1985-2032

64 Treatment of Morphin Addiction. L. W. Weber.
65 Chloroform-Antiformin Technic for Staining Tubercle Bacilli. (Neues Anreicherungsverfahren zum färberischen Nachweise spärlicher Tuberkelbazillen.) F. Loeffler.
66 Hay-Fever. (Zur Behandlung des Heufiebers.) W. Ebstein.
67 Influence of Ehrlich's "606" on the Wassermann Reaction. F. Munk.
68 *Functional Tests of the Pancreas. M. Hirschberg.
69 Meiostagmin Reaction in Foot-and-Mouth Disease. (Meiostagminreaktion bei der Maul- und Klauenseuche.) A. Ascoli.
70 Anatomic Reciprocity of Organs with an Internal Secretion. S. Wideröe.
71 *Influence of Creeping Exercises on Orthostatic Albuminuria. (Einfluss der Kriechübungen auf die lordotische Albuminurie.) G. Pechowitsch.
72 Corneal Lesions in Exophthalmic Goiter. (Erkrankungen der Hornhaut bei Morbus Basedowii mit Exophthalmus.) A. v. Poppen.
73 Treatment of Itching Dermatoses with Hot-Air Douche. (Behandlung juckender Dermatosen mit warmer bewegter Luft.) W. H. Dreuw.

68. **Functional Tests of the Pancreas.**—Hirschberg reports the details of six cases in which the combination of the various functional tests of the pancreas gave instructive findings. They are more reliable in the chronic cases. In acute pancreatitis, Wohlgemuth's method of determining the diastase in the urine, he states, is a valuable aid in diagnosis. It was described in THE JOURNAL, March 5, 1910, page 825.

71. **Creeping Exercises and Orthostatic Albuminuria.**—Pechowitsch says that the experiences at Bier's clinic with Klapp's creeping exercises have confirmed the fact that orthostatic albuminuria is the result of an exaggerated lordosis of the lumbar spine, mechanically obstructing the venous outflow from the kidneys. The creeping exercises improve conditions in the circulation by their favorable action on the general health as well as on the local condition.

Medizinische Klinik, Berlin

October 30, VI, No. 44, pp. 1727-1766 and Supplement

74 Pathology of Suppurative Kidney Disease. (Nierenerkrankungen.) L. Jores.
75 *Abdominal Contusions. (Ueber subkutane Bauchverletzungen.) O. Föderl. Commenced in No. 42.
76 *Physical Examination Before and After Sanatorium Treatment of Pulmonary Tuberculosis. E. Rumpf.
77 Requisites for Radical Roentgen-Ray Treatment. L. Freund.
78 *Connection Between Syphilis and Pernicious Anemia. O. Roth.
79 *Organotherapy of Postoperative Parathyreopriva Tetany. E. Bircher.
80 Epidemic of Poliomyelitis in Austria in 1909. G. Stiefler.
81 Radioactivity of Air and Soil. A. Gockel.
82 Disputed Cases in Regard to Workmen's Compensation, Etc. (Die wichtigeren Entscheidungen des Reichs-Versicherungs-Amts aus den Jahren, 1905-1909.) E. Franck.

75. **Abdominal Contusions.**—Föderl concludes his long study of this subject by warning that any contusion of the abdomen is liable to induce symptoms of shock. It is impossible to determine the extent of the internal injury from the presence or the intensity of the shock or the total absence of signs of shock. He has had patients with severe laceration of the liver or rupture of the bowel who were able to repair to the hospital on foot. Subnormal temperature may be due to the shock and anemia; fever soon after the trauma shows an inflammatory process. The pulse and heart action are not influenced by internal injury except in case of anemia or peritonitis. Nausea and vomiting do not necessarily accompany anatomic injury. With extensive hemorrhage or peritonitis, the decision to operate generally comes too late; the operation is designed to forestall these. Sedatives mask the clinical picture and obscure the diagnosis and indications for treatment. Lack of active initiative on the part of the general practitioner is particularly serious in cases of abdominal contusions. These patients require specialist oversight at the earliest possible moment.

76. **Physical Examination Before and After Sanatorium Treatment of Tuberculosis.**—Rumpf's article was read before the last annual meeting of German sanatorium physicians; he emphasizes the importance of the physical findings and the sources of error. The findings are more instructive, he says, if the patient breathes through the mouth. He discusses in detail the question as to whether the changes in the lungs are due to tuberculous infection or not. It is a great gain when the râles can be completely banished during the course of treatment and no crepitation is heard even after coughing. The infectious process is much more liable to spread from a focus with liquefaction. He found 79 per cent. of the patients with full earning capacity after several years of those patients who lost their râles entirely during treatment; 1.5 per cent. had died. Among those in whom the râles were not entirely abolished, only 31 per cent. were found with full earning capacity, and 42 per cent. had died. The importance of distinguishing between the various types of râles is shown by the late findings in his cases: full earning capacity in 74 per cent., and 4 per cent. had died of those patients with non-sonorous râles, while only 22 per cent. had full earning capacity, and 57 per cent. had died of those with tinkling râles. The latter always indicate destruction of tissue; it is not necessary to wait for the pronounced metallic tinkling râles to reveal tissue destruction. His experience has demonstrated that the length of time required to banish the râles varies widely in different patients. The aim should be to prolong the sanatorium treatment until this is realized for as large a proportion of patients as possible.

78. **Connection Between Syphilis and Pernicious Anemia.**—In Roth's case, the young woman made rapid progress under mercurial treatment and the blood findings returned to normal in the course of three or four months, although the Wassermann reaction was still positive.

79. **Organotherapy and Postoperative Tetany.**—Bircher writes from Aarau that he has operated in 1,400 cases of goiter during the last sixteen years without postoperative tetany in any instance, but lately two cases developed in the course of a month, one in a woman of 55 and the other in a girl of 18. In both cases the tetany was evidently due to loss of parathyroid substance, and the tendency to tetany was promptly cured by parathyroid treatment. This experience, he asserts, shows the possibility of curing tetany by this simple means. It also demonstrates that it is not always possible to refrain from removing the parathyroids in operating on the thyroid. Thyroid treatment has never given any results in this form of postoperative tetany; in the two cases reported it was given first and without effect. This rendered more striking in both the cases the prompt efficacy of the parathyroid treatment. It is possible that the remaining parathyroids might

have developed a compensating hypertrophy in time, but in the meanwhile there was danger of the patients succumbing to the severe manifestations.

Münchener medizinische Wochenschrift

October 25, LVII, No. 43, pp. 2217-2272

83 *Delivery with Contracted Pelvis. (Die kausale Behandlung einer Dystokie bei engen Becken.) O. v. Herff.
84 *Apparatus to Induce Artificial Respiration. (Zur praktische Anwendung der instrumentellen künstlichen Respiration am Menschen.) G. A. Läwen and R. T. Sievers.
85 Orthodiagraphy of the Apex of the Heart. W. Achelis.
86 The Hot-Air Douche in Gynecology. (Die Heissluftdusche.) E. Krösing.
87 Operative Treatment of Inflammation of the Ovaries and Fallopian Tubes. (Zur operativen Behandlung entzündlicher Adnexerkrankungen.) C. Weinbrenner.
88 Medicated Tampons in Gynecology. M. Schwab.
89 Ehrlich's "606" in Syphilis. H. Ritter.
90 Roentgen Rays in Dermatology. (Anwendung der Röntgenstrahlen in der Therapie der Hautkrankheiten.) M. Löwenberg.
91 Roentgen-Ray Treatment in Scleroma. K. Bohac.
92 Visual Anomaly in Left-Handed Individuals. (Augensymptom bei Linkshändern.) E. Enslin.
93 Infant Hygiene in Rural Districts. (Säuglingsfürsorge auf dem Lande.) Eidam.

83. **Contracted Pelvis.**—It has been v. Herff's experience at Basel that conservative measures give as good if not better ultimate results than have been reported from any clinic with the recently introduced operative technics in management of delivery with contracted pelvis. In the 10,289 births in the last seven years contracted pelvis was encountered in 13.8 per cent.: the maternal mortality was 0.4 per cent. and the mortality of the children 7.3 per cent. The main reliance is on artificial premature delivery which was completed spontaneously in 86 per cent.: there was no mortality for which the management of the birth could be incriminated. Operative treatment exposes the mother to grave danger at the time and possibility of later impairment of her working capacity. He argues that the survival and health of the mother of the family far outweigh the consideration for the life of the infant in cases of contracted pelvis, as a rule. The aim should be to reduce infant mortality during the first year or two of life rather than to sacrifice the mothers to bring a few more infants into the world by Cesarean section or pubiotomy. Comparison of his figures with those of Döderlein's clinic, where operative measures are more frequently applied, shows that the final outcome is much better. No permanent injury resulted for the mother from high forceps in his experience, while with pubiotomy from 32 to 50 per cent. of the women have been left with permanent injury according to the reports published by four leading obstetricians (Schläfle, Zweifel, Bumm and Leopold).

84. **Instrumental Artificial Respiration.**—Läwen and Sievers report a case in which the symptoms indicated a brain tumor and respiration suddenly ceased completely. The respiration was kept up by the usual maneuvers for an hour, the pulse being still full. The patient was entirely unconscious, the pupils were dilated and the reflexes were abolished. An opening was then made into the trachea, a cannula introduced and connected with an apparatus which pumped air regularly into the lungs for nine hours, keeping up the heart action while the blood-pressure ranged from 40 to 95 mm. mercury. Necropsy revealed internal hydrocephalus and hemorrhage into the ventricle shutting off all the cerebral functioning and flattening the medulla oblongata. Notwithstanding this serious condition, the instrumental artificial respiration kept the heart beating for nine hours. The great drawback to the method is the necessity for tracheotomy. An illustrated description is given of the apparatus used here for the first time on man, although it had long proved its usefulness for animals.

Gazzetta degli Ospedali e delle Cliniche, Milan

October 25, XXXI, No. 128, pp. 1353-1360

94 Conservative Cesarean Section for Severe Eclampsia. A. Montini.

October 27, No. 129, pp. 1361-1368

95 Action of Extracts of Feces on Development of Certain Micro-Organisms. M. V. Carletti.

Policlinico, Rome

October 30, XVII, No. 44, pp. 1379-1410

96 Meiostagmin Reaction in Tuberculosis in Children. A. Filia.

Riforma Medica, Naples

October 24, XXV, No. 43, pp. 1177-1204

97 Influenzal Skin Lesions. G. Ghedini.
98 *The Blood Serum in Malignant Disease. A. Vecchi. Commenced in No. 42.

98. **The Blood Serum in Cancer.**—Vecchi has been studying the serum from patients with cancer, especially the refraction index, Rivalta's test and the antitryptic power of the serum, comparing the findings with the serum of thirty-six patients with various non-malignant surgical affections. None of the findings seems to have much differential value for the diagnosis of incipient cancer.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

THE MICROSCOPICAL EXAMINATION OF FOODS AND DRUGS. A Practical Introduction to the Methods Adopted in the Microscopical Examination of Foods and Drugs, in the Entire, Crushed and Powdered States. By Henry G. Greenish, F.I.C., Professor of Pharmaceutics to the Pharmaceutical Society of Great Britain. Second Edition. Cloth. Price, $3 net. Pp. 386, with 209 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

AN ANATOMICAL AND SURGICAL STUDY OF FRACTURES OF THE LOWER END OF THE HUMERUS. By Astley Paston Cooper Ashhurst, M.D., Prosector of Applied Anatomy in the University of Pennsylvania. The Samuel D. Gross Prize Essay of the Philadelphia Academy of Surgery, 1910. Cloth. Price, $2.75 net. Pp. 163, with 150 illustrations. Philadelphia: Lea & Febiger, 1910.

PROCEEDINGS OF THE TENNESSEE PHARMACEUTICAL ASSOCIATION. At Its Twenty-Fifth Annual Meeting held at Memphis (Gayoso Hotel), July 19-21, 1910. With Lists of Officers, Committees and Roll of Members. And Annual Report of the Tennessee Board of Pharmacy with Lists of Registered Pharmacists. Paper. Pp. 168. E. F. Trolinger, Secretary, Nashville, Tenn., 1910.

STATE BOARD EXAMINATION QUESTIONS AND ANSWERS OF FORTY-ONE STATES AND TWO CANADIAN PROVINCES. A Practical Work, Giving Authentic Questions and Authoritative Answers that Will Prove Helpful in Passing State Board Examinations. Third Edition. Cloth. Price, $3 net. Pp. 819. New York: William Wood & Co., 1910.

A STUDY OF MELTING-POINT DETERMINATIONS. With Special Reference to the Melting-Point Requirements of the U. S. Pharmacopeia. By George A. Menge, Hygienic Laboratory. Bull. No. 70, P. H. and M.-H. S. of the United States. Paper. Pp. 101, with 20 illustrations. Washington: Government Printing Office, 1910.

THE PHYSIOLOGY OF REPRODUCTION. By Francis H. A. Marshall, M.A., Fellow of Christ's College, Cambridge. With a Preface by Prof. E. A. Schäfer, F.R.S., and Contributions by William Cramer, Ph.D., and James Lochhead, M.D. Cloth. Price, $6. Pp. 706, with illustrations. New York: Longmans, Green & Co., 1910.

TRANSACTIONS OF THE SIXTEENTH ANNUAL MEETING OF THE AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY. Held in Washington, D. C., April 28-30, 1910. Cloth. Pp. 444, with illustrations. [Thomas J. Harris, M.D., Secretary, 117 E. Fortieth Street, New York, 1910.]

FOOD AND FEEDING IN HEALTH AND DISEASE. A Manual of Practical Dietetics. By Chalmers Watson, M.D., Assistant Physician, Royal Infirmary, Edinburgh. Cloth. Price, 10 shillings 6 pence. Pp. 638, with illustrations. Edinburgh: Oliver and Boyd, Tweeddale Court, 1910.

A MANUAL OF NURSING. By Margaret Frances Donahoe, Formerly Superintendent of Nurses and Principal of Training School, Philadelphia General Hospital. Cloth. Price, $2 net. Pp. 489, with 52 illustrations. New York: D. Appleton & Co., 1910.

HEREDITARY CHARACTERS AND THEIR MODES OF TRANSMISSION. By Charles E. Walker, M.Sc., Director of Research in the Glasgow Cancer Hospital. Cloth. Price, $2.40. Pp. 239, with 21 illustrations. New York: Longmans, Green & Co., 1910.

DIAGNOSIS AND TREATMENT OF DISEASES OF WOMEN. By Harry S. Crossen, M.D., Professor of Clinical Gynecology, Washington University. Second Edition. Cloth. Price, $6. Pp. 1025, with 744 illustrations. St. Louis: C. V. Mosby Co., 1910.

WALSH'S PHYSICIANS' HANDY LEDGER. A Companion to Walsh's Physicians' Combined Call-Book and Tablet. Half Leather. Price, $3.50. Pp. 600. Washington, D. C.: Ralph Walsh, M.D., 1807 H Street N. W.

PRAKTISCHE KINDERHEILKUNDE IN 36 VORLESUNGEN FÜR STUDIERENDE UND AERZTE. Von Dr. M. Kassowitz in Wien. Paper. Price, 18 marks. Pp. 653, with illustrations. Berlin: Julius Springer, 1910.

URINARY SURGERY. A Review. By Frank Kidd, F.R.C.S., Assistant Surgeon to the London Hospital. Cloth. Price, $2.60. Pp. 429, with illustrations. New York: Longmans, Green & Co., 1910.

WALSH'S PHYSICIANS' COMBINED CALL-BOOK AND TABLET. Flexible Leather, with Flap and Pocket. Price, $1.50. Washington, D. C.: Ralph Walsh, M.D., 1807 H Street N. W.

TRANSACTIONS OF THE AMERICAN CLIMATOLOGICAL ASSOCIATION. For the Year 1910. Volume XXVI. Cloth. Pp. 235. G. Hinsdale, M.D., Secretary, Hot Springs, Va., 1910.

ANDREAS VESALIUS, THE REFORMER OF ANATOMY. By James Moores Ball, M.D. Paper. Price, $5. Pp. 149, with illustrations. St. Louis: Medical Science Press, 1910.